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Master's Thesis
and
Field Study Abstracts

July 1986 / June 1991

St. Cloud State University
St. Cloud, Minnesota

MASTER'S THESIS AND FIELD STUDY ABSTRACTS

FORWARD

This publication, the twelfth in a series which began in 1957, contains the abstracts of Master's Theses and Field Studies completed by graduate students of St. Cloud State University. The bulletin contains those theses and field studies completed during the period from July of 1986 through June of 1991.

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COLLEGE OF EDUCATION

CHILD AND FAMILY STUDIES

A STUDY OF THE EFFECTS OF BLOCK PLAY ON THE SOCIAL DEVELOPMENT OF PRESCHOOL CHILDREN WITH DEVELOPMENTAL DELAYS

Sharon Louise Bahe

The purpose of this study was to determine if playing with blocks in a social setting would increase the social skills of preschool children with disabilities. Using a single subject design, seven children were observed over a six week period. Data was collected with a video camcorder and analyzed later using the Howe's Peer Play Scale. All but one of the children increased the percentage of time spent in social play. Four of the seven children also demonstrated play in higher social play categories. Results of the study suggest the block play facilitates social interactions among children and provides a play experience that assists children in gaining more complex and sophisticated social play skills

APPROVED BY RESEARCH COMMITTEE, APRIL 1991

Jack Mayala, Chairperson

A SKILLS TRAINING APPROACH VERSUS A PERSONAL MEANING APPROACH IN PARENT EDUCATION: IMPACT ON LEARNING OF COMMUNICATION SKILLS

Deborah V. Bryer

The purpose of this experimental study was to measure the impact of parent education on learning communication skills and to compare a skills training approach with a personal meaning approach. Twenty parents of preschool and school-age children were randomly assigned to programs emphasizing either a personal meaning approach or a skills training approach. Subjects were asked to complete pre, post and follow-up questionnaires. The data were then processed using analysis of variance (ANOVA) and multiple t tests. Results of t tests indicated differences between the groups showing significant differences at the .05 level for the personal meaning group on four items which dealt with listening skills, problem solving skills and skills used to encourage cooperation. Total mean scores were significantly higher for personal meaning group at the end of post-test time.

APPROVED BY RESEARCH COMMITTEE, MAY 1990

Glen Palm, Chairperson

A LONGITUDINAL STUDY OF PARENT INVOLVEMENT IN THE ELEMENTARY SCHOOL AFTER INVOLVEMENT IN A PRESCHOOL PARENT TRAINING PROGRAM

Dennis J. Cerninski

The purpose of this study was to determine if parents previously involved in a preschool education project would show a stronger continuity of involvement than parents not involved in the preschool project in their child's educational system through the elementary years.

Parents from the two groups responded by answering a questionnaire which contained a list of parent involvement opportunities in the school district. In addition, parents could add comments for the various opportunities listed. Eight of the opportunity areas were analyzed. The only areas showing any discriminative value were: reading to increase parenting knowledge (control group reads more) and classroom visitation (experimental group more likely to visit the classroom).

APPROVED BY RESEARCH COMMITTEE, AUGUST 1986

Jack Mayala, Chairperson

AN INVESTIGATION OF THE RELATIONSHIP BETWEEN CONSERVATION ACQUISITION AND EARLY READING ACHIEVEMENT

Roberta Lynn Dale

Recent studies have suggested that there is a relationship between concrete operational performance on Piagetian tasks and successful beginning reading. The purpose of this study was to investigate the relationship between early reading achievement and the ability to conserve as measured by replications of five Piagetian conservation tasks. Second, gender differences in the relationship of early reading ability with early conservation ability were also examined. Subjects were 20 Caucasian five year olds, ten males and ten females, who could already read. The children were enrolled in day care centers and preschools in the St. Cloud and Minneapolis, Minnesota areas. The subjects' reading achievement was measured by the Informal Reading Inventory (IRI). Concrete operativity was measured by performance on Piagetian conservation tasks of number, quantity, liquid and length.

The findings for this study of early readers were: (1) There was no significant relationship between the ability to read and the ability to conserve (early readers were not early conservers). (2) No significant gender differences were found. Performance on tests of conservation was unrelated to or even negatively associated with reading performance for both boys and girls.

APPROVED BY RESEARCH COMMITTEE, MAY 1987

Jack Mayala, Chairperson

THE JOB SATISFACTION OF MINNESOTA'S EARLY CHILDHOOD FAMILY EDUCATORS

Nita J. Enderson

This study utilized a questionnaire which was mailed statewide to coordinators of Early Childhood Family Education programs with the assistance of the Minnesota Department of Education. More than 460 parent educators and early childhood educators completed the survey; 412 surveys were usable for the purpose of the study. Results of a facet-free measure of job satisfaction indicated a high level of job satisfaction among Early Childhood Family Educators. A facet-

specific measure of job satisfaction also indicated a high job satisfaction. Both job satisfiers and job dissatisfiers were identified by the facet-specific measure. The ECFE job satisfiers related to the challenge of the profession, positive relationships among members of the ECFE staff and with families participating the programs, and the support received from the immediate supervisor of the program. The ECFE job dissatisfiers related to low pay, lack of fringe benefits, insufficient paid preparation time, lack of opportunities to advance within the program, and insufficient space assigned for the Early Childhood Family Education classes. Job satisfaction did not relate significantly to the personal and professional characteristics of the respondents.

APPROVED BY RESEARCH COMMITTEE, MAY 1991

Glen Palm, Chairperson

A SKILLS TRAINING APPROACH VERSUS A PERSONAL MEANING APPROACH IN PARENT EDUCATION: IMPACT ON PARENTAL SENSE OF COMPETENCE

Lissa Hultgren

The purpose of this experimental study was to measure the impact of parent education on parent competence and to compare a skills training approach with a personal meaning approach. Twenty parents of preschool and school-age children were randomly assigned to programs emphasizing either a personal meaning approach or a skills training approach. Subjects were asked to complete pre, post and follow-up questionnaires.

The instrument used to measure sense of competence was the Parenting Stress Index (PSI) (Abidin, 1983). The data were then processed using analysis of variance (ANOVA) and multiple t tests. Statistical findings showed no significant differences at the .05 level for parents' sense of competence.

APPROVED BY RESEARCH COMMITTEE, MAY 1990

Glen Palm, Chairperson

A DESCRIPTIVE STUDY OF PARENTS' REASON FOR DELAYED KINDERGARTEN ENTRY

Ann Marie Juairé

The focus of this study was to determine the attitudes of parents who had chosen not to enroll their age eligible children in the Sartell, Minnesota 1987 kindergarten class, and to determine if the parents perceived the delay as an opportunity to increase the likelihood of future social and educational success. The subjects, parents of 32 age eligible children, responded to a questionnaire that examined issues related to school entrance and participated in home interviews.

The findings for this study indicate that the specific factors of chronological age or sex were not the deciding factors in determining time of school entry. The parents took into consideration their individual child's social, emotional, and physical development and concluded delaying their child's school entry would more likely insure their child a successful social and academic school experience.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1988

Jack Mayala, Chairperson

PRESCHOOL DEVELOPMENTAL SCREENING: RATIONALE FOR DEVELOPING LOCAL NORMS

Cheryl A. Weitbrecht Kunshier

The Developmental Indicators for the Assessment of Learning-Revised (DIAL-R) was used to screen 1,450 preschool children for developmental delays. The subjects were between the ages of three years-six months and four years-eight months. The screenings were done in six small, rural, central Minnesota school districts which belonged to one special education cooperative. The individual raw scores were used to develop local normative data. These data were compared with the national normative data provided in the DIAL-R manual. The DIAL-R manual states that the national normative data will identify children scoring 1.5 standard deviations (S.D.) below the mean, which should be approximately 6.68% of the population screened. Results indicated that national normative data failed to identify the subjects scoring -1.5 S.D. from the mean of this particular population. These results support the use and development of local norms.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1987

Pamm Mattick, Chairperson

A COMPARATIVE ANALYSIS OF GENDER DIFFERENCES IN SPONTANEOUS FANTASY PLAY BEHAVIOR EXHIBITED BY THREE-TO-FOUR YEAR OLD CHILDREN

Debra Lynne McIntyre

This investigation intended to study the nonexclusive relationship between gender and fantasy play behavior in a naturalistic setting. Subjects were 40 Caucasian three and four year olds, 20 females and 20 males enrolled in childcare centers in the St. Cloud and Westonka, Minnesota, area. The investigator used a time sampling observation form and tracked the subjects' fantasy play behavior for ten minutes each using five play categories. The effects of gender, childcare center, birth order, number of siblings, and marital status of the subject's parents were examined. The results indicated that the subjects played with objects in a similar manner, but differed significantly in the choice of objects chosen. The remaining variables produced inconclusive results.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1986

Jack Mayala, Chairperson

A COMPARISON OF CHILD-FIND SYSTEMS: IDENTIFYING CHILDREN WITH HEARING IMPAIRMENTS

Merry C. Mund

This research was designed to determine if a relationship existed between the age a hearing impaired child was identified and the child-find system used to identify that child. Also examined was the efficacy of Utah's organized statewide child-find system compared to the less organized systems of New York, Arkansas, Ohio, and Minnesota. A third component of the study, a comparison of the SKI*HI Language Development Scale Receptive and Expressive language level test scores, was not completed because all data was sent to the author categorized by state as frequency numbers and percentages instead of being separated into individual child data cases.

Subjects for the study were 604 children, ages one to 78 months, from Utah, New York, Arkansas, Ohio, and Minnesota. Included were male and female children with hearing impairments whose program supervisors completed and submitted data to the SKI*HI data collection center. Computer print-outs, measuring frequencies and percentages

on 11 variables, including the age of identification, LDS Expressive and Receptive test scores, and degree of hearing loss were used to analyze the data.

The research found that a higher percent of the hearing impaired children from Utah were identified earlier than the children from New York, Arkansas, Ohio, and Minnesota. Other findings indicated that more children with milder losses were identified earlier and that children from Utah were fitted with hearing aids earlier than those children from New York, Arkansas, Ohio, and Minnesota.

The data base for this study was hindered by such things as incorrect data form completion, unavailable data, format of the data sent from the SKI*HI data collection center, and lack of funding to enter submitted data into the SKI*HI data collection computer system. The adjustments that were made limit generalizations of this data.

Additional follow-up research should be done using an itemized child-to-child data print-out to obtain data that would allow analysis of the differences in language levels, treatment times, hearing losses, and other handicapping conditions among the children from the five states. Furthermore, an investigation should be done to determine which variable increased the number of identified children with hearing impairments, an organized child-find system or a more structured data collection system.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1989

Pamm Mattick, Chairperson

A STUDY OF RELATIONSHIPS BETWEEN SCHOOL ENTRY AGE, CHILDREN'S ACHIEVEMENT AND ABILITY

Patricia Lee Peterson

The focus of this study was to look at the combination of age at entry into kindergarten, individual ability levels and their relationship to academic achievement in mathematics, reading and language. The subjects were 126 children from Becker, Minnesota, who entered kindergarten in the fall of 1981, 1982, or 1983. Their scores on the Developing Cognitive Abilities Test and Stanford Achievement Test were examined for relationships that exist between age, ability and achievement.

There were no significant relationships between achievement and ability scores when the entry age into kindergarten was considered. Age at entry into kindergarten was expressed in months ranging from 104 months to 115 months. The relationship between ability scores and achievement scores were significant. However, there were no significant relationships between total achievement in mathematics, reading, and language when the effect of age on ability was removed statistically. Although no significant relationships were found, a general shape to the curves was present in all three areas of mathematics, reading and language. This shape indicated lower scores in the middle of the age range.

APPROVED BY RESEARCH COMMITTEE, MAY 1990

Jack Mayala, Chairperson

STRESS RESILIENCE IN ABUSED CHILDREN

Barbara J. Roeber

This study examined stress resilience in young children exposed to abuse. The study was undertaken with the hypothesis that few abused young children would be stress resilient, but that any resilience found would be characterized by female gender and low cumulative life stress scores. The sample study consisted of sixteen four, five, and six-year-old children

who had experienced physical, sexual, or emotional abuse, neglect, or were witness to domestic violence. Information was gathered from the child's parent or guardian using structured interviews of one to two hours. The Coddington Social Readjustment Rating Scale was used as a measure of cumulative life stress. The Louisville Behavior Checklist measured psychopathology in the children. Data analysis revealed that stress resilience does exist in abused young children. Increasing cumulative life stress was moderately correlated with increasing psychopathology in the children. Gender did not appear to be related to stress resilience. The small sample size limits generalization of the results of this study.

APPROVED BY RESEARCH COMMITTEE, MAY 1988
Pamm Mattick, Chairperson

THE IMPACT OF AN EDUCATIONAL AUDIOLOGY PROGRAM ON MULTIPLE RURAL SCHOOL DISTRICTS

Jann M. Schmidt

PROBLEM: This study was designed to collect data over a three-year period describing the hearing status of children (grades preschool through fourth grade) from three rural Minnesota school districts. The data collected was used to study the impact that an educational audiology program can have on the children served. The specific questions addressed in the study were: Did a systematic educational audiology program utilizing tympanometry and the services of an educational audiologist result in:

1. increased identification of children having significant hearing losses and/or middle ear conditions?
2. increased frequency of referral for medical interventions as compared to data available prior to the initiation of the Educational Audiology Program?

The hypothesis of this study was that a systematic hearing screening program, identified as the Educational Audiology Program, would result in increased numbers of children in preschool through fourth grade being identified as having significant hearing losses and/or middle ear conditions as compared to the three years prior to 1987 when screening was conducted without tympanometry and an educational audiologist.

PROCEDURES: A record search using the Pupil's Health Record and cumulative records was conducted in which data on the auditory status of each subject were recorded and summarized. Information on pure tone screening, tympanometry, referrals to medical personnel and re-checks were also collected.

FINDINGS: Results indicated an increase in the number of children identified as having hearing losses and/or middle ear conditions and in the number of medical referrals. The data suggest that these increases occurred concurrently with the implementation of a hearing screening program that included both impedance measurements and educational audiology services.

APPROVED BY RESEARCH COMMITTEE, FEBRUARY 1989
Joan Blaska, Chairperson

READING PLACEMENT: A DEVELOPMENTALLY APPROPRIATE ALTERNATIVE PROGRAM FOR "AT RISK" KINDERGARTEN CHILDREN

Judy A. Steeber

A readiness program can serve as a developmentally appropriate alternative placement for kindergarten children at risk for school failure. The present study investigated the differences in academic achievement and self-esteem between former readiness students and their counterparts who went into first grade following kindergarten. Part one examined the academic achievement of former readiness students, a "watchlist" and a control group. In part two, a comparison between the readiness students and a control group of similar age explored the area of self-esteem.

Subjects for the study were 11 former readiness students who have completed fifth and sixth grades. In part one, a "watchlist" made up of students who completed kindergarten and went into first grade with readiness concerns and a control group comprised of students who completed kindergarten and went into first grade as scheduled were compared. These students have now completed sixth and seventh grades. In part two, the control group consisted of fifth and sixth grade students of similar age to the former readiness students. These children began kindergarten at age six rather than age five with the exception of one retention.

The results of the study indicated that the scores on the Iowa Test of Basic Skills were significantly lower for the readiness group when compared to the "watchlist" at grade three only and the control group at grades three, four, and five. No differences were found between the "watchlist" and control groups. In part two the results comparing the raw scores of the two groups revealed no difference in self-esteem. In reviewing the cluster scores, the control group obtained a higher score in the area of anxiety, thus indicating a significant difference.

The study suggests that local decisions regarding alternative programming for "at risk" kindergarten children need to be explored and reviewed. In addition, future research studies need to investigate the effects of other non-promotion alternatives for young children.

APPROVED BY RESEARCH COMMITTEE, NOVEMBER 1990

Jack Mayala, Chairperson

MAINSTREAMING AND INTEGRATION OF FOUR-TO-SIX YEAR OLD CHILDREN WITH HANDICAPS IN RURAL MINNESOTA

Susan L. Weiler

PROBLEM: This study was designed to collect data from school districts in Minnesota with an enrollment of less than 1,800 students that provide special education services for preschool-aged children during the 1989-1990 school year. The data collected was analyzed to determine:

1. Who is providing mainstreaming and integration for their children in ECSE from four-to-six years old in rural Minnesota?
2. What practices are being used?
3. What alternative settings are being used?
4. What barriers do the staff face integrating and mainstreaming into these alternative settings?

PROCEDURES: A survey was sent to 152 districts in Minnesota having an enrollment of less than 1,800 and providing early childhood special education services for four-to-seven year old children. Frequency counts were compiled from the data, counting the number of districts that mainstream and integrate this population, what alternative settings were

in use, the level of satisfaction with these alternatives, nonuse of the alternatives, barriers for not using an alternative, and a list of creative practices not addressed on the survey that programs are using to provide the least restrictive environment for their students.

FINDINGS: Most rural districts in Minnesota are providing some form of mainstreaming and integration for their four-to-six year old children. The most frequently used alternative settings are the kindergarten classroom, family education programs and Head Start programs. Most of the respondents have moderate satisfaction with their alternatives. The reasons for satisfaction at all levels varies from situation to situation. Child care centers, nursery schools and family day care providers were the least used alternative settings. The major reason for not using these alternatives was lack of availability due to not having the facility in their community, to finances and district practices (interpretations of availability).

APPROVED BY RESEARCH COMMITTEE, NOVEMBER 1990

Glen Palm, Chairperson

EDUCATIONAL ADMINISTRATION

EVALUATION OF THE PAUL BUNYAN SPECIAL EDUCATION COOPERATIVE, BRainerd, MINNESOTA

Randal W. Eckart

PROBLEM: To focus on a building-by-building survey to make determinations as to the opinions, feelings and general attitudes of respondents to the following question: is the Paul Bunyan Special Education Cooperative meeting the educational needs of its school-aged handicapped population.

SAMPLE: The evaluation consisted of 24 schools, 85 special education teachers, 45 regular education teachers, 34 parents/guardians of special education students, 21 school administrators and 249 special education students.

METHOD: Questionnaires were designed and constructed for the five target groups. Questionnaires were constructed in four parts. These parts were student rating scales, comment section, special education rating scale, and anonymous responses. Seven organizational sub-systems were identified as comparative commonalities between parent, teacher, and administrator groups. Students were identified in one grouping and again in five separate disability categories.

RESULTS: This evaluation revealed a number of repeatedly occurring ideas, opinions, and attitudes, as well as strengths and weaknesses within the Paul Bunyan Special Education Cooperative. Part three of the questionnaire indicates that the cooperative is meeting the educational needs of its school-aged handicapped population.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1990

Jerry Wellik, Chairperson

A PROCESS WHEREBY A SCHOOL DISTRICT CAN DEVELOP A PHILOSOPHY OF EDUCATION STATEMENT

Karen Patricia Gates

Following the period of rapid growth in education during the 1960s and early 1970s, schools experienced a rapid decline in their enrollment figures in the late 1970s and into the early 1980s. The changing enrollment patterns, plus other social pressures, caused the school systems to re-examine their philosophy of education and to determine their priorities more clearly. That was the background which led District 742 Community Schools, the St. Cloud School District, to enter a process which resulted in a completely revised philosophy of education statement.

PROBLEM: The purpose of the study was to identify a process that any school district could use to review, revise, and/or develop a statement of their educational philosophy. Two assumptions have been built into the process: (1) that the district wants an original document which will reflect local constituencies, and (2) that the school district wants community participation in the process. The process described identifies a way to get large numbers of people to participate and yet maintain a manageable process.

PROCEDURE: In the spring of 1982, the District 742 Community School's board of education assigned four goals to the Planning, Evaluation, and Reporting (PER) committee. Among those goals was the task of providing input for a revised philosophy of education statement for the district. Leadership for the process of reaching that goal came from the PER committee.

The most significant outcome of the first year's work for the committee was the development of a survey of the community which allowed the committee to know exactly what the community valued and desired in educational programs for students who would graduate in the 1990s and beyond.

In the second year of the process, the committee released the data gained from the survey, reviewed all the national reports and other pertinent sources, and wrote a draft copy of the statement. This draft copy was reviewed by large groups of people before it was finally approved by the board of education in June, 1984.

FINDINGS: The process worked effectively for one school district and could be adapted to provide information for other school districts, as well.

CONCLUSIONS: The district using the process needs to focus on a desire to have effective community input and participation, first of all. Then they need to have an effective leader who has good group process skills. The district needs to spend time reviewing and modifying the survey instrument for local application. Following this procedure should allow a school district to gain effective community participation.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1986

William Stimeling, Chairperson

THE USE OF INTERACTIVE TWO-WAY TELEVISION IN ELEMENTARY SCHOOLS IN SELECTED ITT SITES IN MINNESOTA

Marge Gruenes

PROBLEM: The problem in this field study was to attempt to determine if school districts currently not using Interactive Two-way Television at the elementary level plan to use ITT within the next five to ten years. The study investigated which courses would be offered if school districts used ITT at the elementary level. Further, the study explored reasons why school districts do not plan to use ITT at the elementary level. The information from the field study was used to compare the size of the districts responding with their future plans for the use of ITT at the elementary level.

RESEARCH DESIGN: Data for the study were collected by a questionnaire which was mailed to 33 school district superintendents in five selected Interactive Two-way Television sites in northern and central Minnesota. A cover letter, signed by a superintendent, was sent along with the questionnaire, and a self-addressed, stamped envelope was also enclosed. Returns were received from 33 respondents or 100%.

The questionnaire was piloted to assure clarity of questions and directions. The data were interpreted by analysis of variance, percentages, and cluster comparisons. Cross tabs were done to compare data based on district size and response.

FINDINGS: Based on the analysis of the data, the following conclusions were reached in this field study:

1. School districts planning to use ITT at the elementary level within the next ten years had an enrollment under 1,000 students.
2. Of the courses to be offered using ITT, foreign language was the first choice of the majority of the school districts.
3. Within ten years, 42% of the districts which responded indicated they plan to use ITT at the elementary level.
4. Fifty-three percent of the districts responding had a written mission statement for the use of ITT. No district had a written plan for the use of ITT at the K-6 level.
5. Less than half of the superintendents who responded to the survey support ITT at the elementary level.

RECOMMENDATIONS:

1. A written mission statement and plan should be incorporated in the goals of school districts planning to use ITT at the elementary level.
2. Criteria must be designed to evaluate the effectiveness of using ITT at the elementary level.
3. Elementary principals and teachers need to be in-serviced in the use of ITT.
4. Another study could investigate whether small districts are more apt to use ITT at the elementary level than larger districts as suggested by this study.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1990

John M. McLaughlin, Chairperson

**EFFECTS OF IN-SERVICE ON DEVELOPMENT OF ACTION PLANS
IN A SCHOOL PLANNING PROCESS**

Marjorie W. Hawkins

PROBLEM: Action plans are a key component in the school improvement planning process. Since the action plan's effectiveness as a tool in implementing school goals depends on the plan's quality, this study attempted to determine the effect of in-service in developing action plans.

PROCEDURE: Eight committees developed pre- and/or post-action plans in four task areas. The plans were evaluated using specific criteria and comparative data was compiled.

CONCLUSIONS:

1. Pretesting does not significantly affect the development of subsequent action plans.
2. Passage of time during a school year does not affect the quality of action plans.
3. Committee members within a particular school setting do not necessarily affect the development of action plans.
4. In-service on the development of action plans does affect the quality of those plans.
5. Monitoring is frequently the weakest area in action planning and requires careful attention during in-service.

APPROVED BY RESEARCH COMMITTEE, MAY 1990

Elaine L. Leach, Chairperson

A RESEARCH-TO-PRACTICE PARADIGM: DETERMINING ADMINISTRATOR EVALUATION CRITERIA

Diana Greenblau Kasper

PROBLEM: The problem in this study was to attempt to determine criteria for administrator evaluation generated by the current practicing administrators. The study investigated the influence of the administrator's position, years of experience, size of school, and size of teaching staff on the criteria identified. Further, the study compared the criteria in terms of whether or not current practicing administrators noted that the criteria should describe or presently did describe administrator evaluation. This comparison was used to examine the absence, the presence, or the shift of a research-to-practice paradigm.

RESEARCH DESIGN: Data for the study were collected by a questionnaire which was mailed to all the public school principals in the 32 largest school districts in Minnesota. A cover letter, the questionnaire, and a self-addressed stamped envelope were sent to 463 principals. Returns were received from 261 respondents or 56.4%.

The data were tested and interpreted by analysis of means, variance, and percentages. The .05 level was used to determine significant differences based on the analyses of variance which was determined before and after cluster computations. T-tests were done to compare paired clusters for respondents from all districts with respondents from District 742.

FINDINGS: Based on the analyses of the data, the following conclusions were reached:

1. Criteria identified reflected administrator's position within the school and school size.
2. Models ranked strongest to weakest were Leadership, Management by Objectives, Job Targets, and Results Oriented Management in Education.
3. No model was significantly dismissed so that a definitive paradigm shift could be demonstrated.

4. An evolving paradigm was confirmed with indicators primarily from the Leadership model.
5. When compared with all respondents, District 742 respondents showed similar ranking of the models.

RECOMMENDATIONS:

1. Criteria for administrator evaluation must be designed to recognize the differences of school position and school size.
2. Criteria from the Leadership model should be incorporated into an administrator evaluation design.
3. District 742 Board of Education should investigate the possible implementation of an administrator evaluation system that is based on criteria generated by current practicing administrators as suggested by this study.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1988

Elaine L. Leach, Chairperson

A STUDY OF CURRICULUM REVIEW PROCEDURES IN SCHOOLS IN MINNESOTA

Pamela Kyllingstad

This study is an inductive-descriptive look at the ways in which selected schools in Minnesota conduct curriculum evaluation. Increased accountability of schools for student education is being advocated by judicial, legislative and public groups.

Following a review of the last ten years of writings about curriculum evaluation, a questionnaire was designed to gather data to answer three research questions.

1. Who is involved in curriculum review?
2. What procedure is used in curriculum review?
3. What cycle of curriculum review results from use of the established procedure?

The questionnaire was sent to 100 schools selected by random sample means. The sample was balanced for size of school, which required one extra school being selected and one being discarded, to keep the sample size of 100.

Myriad forms of curriculum evaluation are utilized by schools in Minnesota. There are some differences in the sophistication of the process depending upon the size of the school. Generally, schools involve administrators, teachers, parents and students in curriculum evaluation. The more often utilized forms of evaluation include evaluation of basal scope and sequence charts, curriculum mapping, needs identification, Minnesota's Planning, Evaluating, and Reporting process and, for schools over 2,000 students, North Central Accreditation team review. The mean review cycle is five years.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1987

Gerald Wedlund, Chairperson

AN ANALYSIS OF THE RELATIONSHIP OF A MULTICULTURAL PLAN AND TEACHERS' ATTITUDES IN SELECTED SCHOOL DISTRICTS

Suzanne K. Larson

The problem of this study was to determine if a relationship existed between a school district having a multicultural plan and the attitudes of teachers in that district toward diversity. Two similar districts, one with a multicultural plan in place and one without a plan, were compared to determine whether teachers' attitudes had been affected in those districts. From the population of teachers within these two districts, a systematic sample of 20% were contacted for participation in the study. The measurement instrument used was P.C.L. Heaven's (1985) Revised F Scale. A simple correlation matrix revealed a Cronbach's Alpha of 0.8220. The mean of the significance level of the 34 items was not less than .05. Findings, therefore, indicated that teachers in the district with a multicultural plan did not have less authoritarian attitudes than teachers in the district without a multicultural plan.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1990

John M. McLaughlin, Chairperson

A STUDY OF TEACHER CONTRACTS AND DUAL CAREER/EMPLOYED FAMILIES IN CENTRAL MINNESOTA SCHOOL DISTRICTS

Carol Ann Olson Loomis

PROBLEM: The purpose of the study was to determine to what extent the basic benefit needs of dual career/employed families, specifically personal leave and sick leave, are addressed in the 1985-1987 negotiated master teacher agreements for the schools in the Central Minnesota Educational Cooperative Service Unit (CMECSU), Region VII.

PROCEDURES: The study was explorative-descriptive and gathered information for content analysis by examining master teacher agreements in 20 school districts. Follow-up questionnaires, developed by the author, questioned the personnel administrator in each district to ascertain the administrator's interpretation of the master teachers' agreement with specific attention to the issues of personal leave and sick leave.

FINDINGS: The content analysis suggested that even if the contract language is clearly written, contract interpretation and application is up to the discretion of the administrator in charge. This practice failed to provide clear interpretation of the contract benefits which address the issues of, and are important to, dual career/employed families.

CONCLUDING DISCUSSION: In conclusion, provisions for dual career/employed families remain available through the master teachers' agreement. However, the final interpretation of those provisions, especially that of personal leave and sick leave, must be identified through personal consultation on a day-to-day basis with the administrator in charge.

Based on this conclusion, the author offers the following recommendations:

1. School districts should have a defined system of collecting demographic data and statistics on all district employees.
2. Both professional employees and district administrators, especially the administrator in charge of personnel, should be knowledgeable about master teacher agreements.

3. To balance the more traditional single income family representation found in most districts' contract negotiations, teams should intentionally include people from dual career/employed families that are employed on either a full-time or part-time basis.
4. School districts should implement a variety of work schedules such as job-sharing and flexible scheduling for employees.
5. In the event of a future teacher shortage, administrators must be aware of the benefit needs of dual career/employed families and be prepared to meet these needs as part of the marketing and recruitment plan of the school district.
6. Both the school district and the negotiating team should prepare a cafeteria-style benefit package plan for district employees.
7. Extensive research investigating the needs of dual career/employed families and their wholistic relationships to the world of work needs not only to be continued, but also needs to be expanded in scope and vision.

APPROVED BY RESEARCH COMMITTEE, MAY 1988

Gary A. Dill, Chairperson

THE EFFECT OF SELF-PERCEIVED LEADERSHIP CHANGE BEHAVIORS IN IMPLEMENTING OUTCOME-BASED EDUCATION

Patricia Ann Mauer-Loehr

PURPOSE: This field study explored the self-perception of current principals in Minnesota toward their change agent style in relation to the implementation of the components of Outcome-based Education (OBE) and school climate. Three research questions were addressed.

1. Do current Minnesota principals perceive their leadership style for change as that of initiators, managers, or responders?
2. To what extent do demographic variables indicate a leadership style preference?
3. Do the self-perceived leadership styles of current Minnesota principals affect the successful implementation of an outcome-based education change process?

PROCEDURE: This study was supervised under the Center for Educational Administration of St. Cloud State University in partial fulfillment of the Specialist Degree. It is a study based on a survey done of principals in elementary and secondary schools randomly chosen from throughout Minnesota. Research was done to identify the self-perception of principals regarding their leadership style for implementing an outcome-based educational process and school climate. The study also involved a review of the literature related to outcome-based education, school climate, and leadership change behaviors.

SIGNIFICANCE: The importance of educational improvement is a goal recognized by educators and the public at large. The state of Minnesota is addressing this issue by selecting ten research and development sites by October 1, 1989, to implement an outcome-based education model. This commitment by the state of Minnesota will require schools to go through a change process. Current administrators have self-perceptions of their change agent styles. Data that identifies

the current style perceptions can be used to develop in-service programs to guide principals to utilize appropriate types of leadership when implementing OBE.

FINDINGS AND RECOMMENDATIONS: The findings of this study indicate that a greater percentage of principals utilize the managerial style of leadership when implementing a change process. The findings also report a greater usage of the initiator style for the categories of instruction and school climate.

The analysis of the demographic variables, also in the study, suggest there is no significant relationship between the variables and leadership style preference.

The findings do suggest minimal percentage patterns when the independent variables are crosstabbed.

Due to these findings and the information in the literature review, it is recommended that school principals examine the characteristics of the initiator, manager, and responder leadership styles and utilize the appropriate leadership behavior to implement a change process.

APPROVED BY RESEARCH COMMITTEE, MAY 1990

Gary A. Dill, Chairperson

AN ANALYSIS OF THE ACHIEVEMENT OF LOW SOCIOECONOMIC STUDENTS IN DETERMINING EFFECTIVE SCHOOLS

Marcia Smith Moerke

PURPOSE: The purpose of this study was to determine if second grade students in a large midwest suburban school district on free or reduced lunch scored lower on standardized tests than all sample students in various school groups. Three research questions were addressed.

1. Do students receiving free or reduced lunch benefits score lower on standardized reading tests than the rest of the population in the school district?
2. Are lower reading test scores due to students who receive free or reduced lunch benefits?
3. Is it fair and appropriate to attribute lower standardized reading test scores to the presence of free or reduced lunch students?

PROCEDURE: This study was supervised by the Center for Educational Administration and Leadership of St. Cloud State University in partial fulfillment of the degree of Master of Science in Educational Administration. It was a limited study based on the Iowa Test of Basic Skills reading test scores of 2,693 second graders from 27 elementary schools in a large midwest suburban school district with relatively small, but varying number of students on free or reduced lunch. Research was done to determine whether the observed reading test scores of second grade students on free or reduced lunch differed significantly from the district test score distribution in all sample students in all schools and in the ten highest and lowest achieving schools. The study also provides a disaggregated comparison of second grade reading test scores from schools with the least and the most students on free or reduced lunch.

FINDINGS AND IMPLICATIONS: The study found that within the sample school district, the students on free or reduced lunch scored significantly lower than district distribution of scores, even when small numbers of free or reduced lunch students were present. Further analysis showed that identified higher achieving schools scored higher than identified lower achieving schools even when the students on free or reduced lunch were taken out of the test score composites. The schools with higher scores tended to have both students on and not on free or reduced lunch that scored higher than other schools. Likewise, the lower achieving schools seemed to have students on and not on free or reduced lunch that scored lower than other schools. Schools that had a lower number of students on free or reduced lunch scored

higher than schools with higher numbers of students on free or reduced lunch, but examples of exceptions were found in each group, indicating that the presence of free or reduced lunch students did not need to mean lower scores

Since this research indicates that both students on free or reduced lunch and students not on free or reduced lunch score differently among schools in the same school district, further investigation on traits of higher scoring schools would be an interesting and worthwhile study.

APPROVED BY RESEARCH COMMITTEE, MAY 1991

Charles Moore, Chairperson

MEASURING THE EFFECTIVENESS OF CHAPTER I INSTRUCTION IN A RURAL SETTING

John Peterka

Chapter I is a federally-funded compensatory education program created as part of the Department of Education's Education Consolidation and Improvement Act of 1981. Chapter I serves educationally disadvantaged students who live in school attendance areas with high concentrations of low-income families. The goal of Chapter I is to improve the educational opportunities of educationally deprived students by helping these students succeed in regular programs of local school districts. The districts have flexibility in designing an instructional approach and delivery system. Each Chapter I project must address basic skills and more advanced skill areas, but should put emphasis on those areas that are appropriate for the local district.

The purpose of this study is to substantiate the value of Chapter I intervention in the Osakis Public Schools. In this age of accountability, it is important to confirm that remedial interventions used in schools are effective. It is the responsibility of administrators to oversee and evaluate all educational programs within schools.

The Osakis Public School's graduating classes of 1991, 1992, 1993, and 1994 comprised the population of the study. The students were divided into experimental and control groups. The experimental group consisted of approximately ten students from each of the classes and received Chapter I intervention in grades 1 through 6 in the Osakis elementary school. The control group consisted of approximately ten non-Chapter I students who were randomly selected by the use of a random number table. The data about the students who received Chapter I intervention were obtained from each student's Title I or Chapter I personalized education plan. Data about non-Chapter I students were obtained from the yearly class record information. All of the data were furnished by the elementary principal's office of the Osakis Public Schools.

This study revealed that the Osakis Elementary School is doing a good job with their Chapter I program. For the most part, the Chapter I students are making progress in reading and math for approximately one year for a year of service. The study did reveal some areas of concern involving the curriculum of both Chapter I and non-Chapter I students. Also, the study revealed that students who tested out of the Chapter I program may need additional assistance in the regular education classroom to maintain and improve their skill levels.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1990

Gary Dill, Chairperson

ELEMENTARY TEACHERS' PERCEPTION OF PERSONAL LEARNING STYLE AS COMPARED TO RESULTS OF PRODUCTIVITY ENVIRONMENTAL PREFERENCE SURVEY

Pamela J. Peterson

PROBLEM: Are there differences in elementary teachers' personal perceptions of elements of their learning styles as compared to a measurement of these same elements?

PROCEDURE: The sample group consisted of the elementary classroom teachers from one elementary school. The subjects were administered the writer's pre-assessment questionnaire followed by the Productivity Environmental Preference Survey (PEPS). The two instruments were then correlated in various selected areas for purposes of comparison to see if elementary teachers could accurately preassess certain preference components of learning style.

FINDINGS: The writer's pre-assessment questionnaire and the Productivity Environmental Preference Survey were compared, with the following percentages showing the matches that occurred on areas from the PEPS between the two instruments:

0 percent (Afternoon, Structure, Tactile, Kinesthetic)	36 percent (Visual)
17 percent (Noise Level, Motivation, Responsible)	50 percent (Auditory)
22 percent (Warmth, Persistent)	59 percent (Evening-Morning)
28 percent (Mobility, Design)	67 percent (Learning Alone--Peer Oriented)
33 percent (Light, Requires Intake)	

CONCLUSIONS: The results of this field study seem, as measured by the two instruments, to indicate that elementary teachers generally are not very aware of their own learning preferences. The percentages of matches occurring between the pre-assessment questionnaire and the PEPS ranged from 0 percent to 67 percent. Only three areas were 50 percent or greater; the preferences of Auditory, Evening-Morning, and Learning Alone--Peer Oriented. More emphasis needs to be placed on learning styles in general and teacher awareness in particular to effectively use learning styles in the learning/teaching process.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1986

William F. Stimeling, Chairperson

ADMINISTRATIVE SENSITIVITY TOWARD ABLE LEARNERS IN OUTCOME-BASED EDUCATION

Karen A. Roos

The purpose of this study was to research whether the level of administrative sensitivity toward able learners has a positive influence on teacher perceived support for quality enrichment activities in Outcome-Based Education.

Outcome-Based Education is a new concept occurring in some public schools in Minnesota. Because of the major changes which occur in schools incorporating this program, this study investigated the role of the principal in implementing change. The research indicates that administrators are key individuals in successful implementation of change. Their knowledge and ability to provide leadership greatly affects how successful a new program will be perceived.

Enrichment is one of the major components of Outcome-Based Education. However, very little guidance is available in the research regarding what constitutes quality enrichment activities. Therefore, one must refer to the literature on gifted curriculum for this guidance. Teachers and administrators must become knowledgeable about the criteria so quality enrichment activities can be developed and supported. When this occurs, appropriate curriculum will be provided for able learners in Outcome-Based Education.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1990

Charles Moore, Chairperson

A COMPARISON OF THE APPLICATION OF QUALITY CIRCLES IN THE LITTLE FALLS AND STAPLES, MINNESOTA, INDEPENDENT SCHOOL DISTRICTS

Faith P. Rudnitski

PROBLEM: The purpose of this study was to describe the implementation and application of Quality Circles (QC's) in the Staples and Little Falls, Minnesota, school districts by comparing the implementation and application to an optimal model.

PROCEDURE: An optimal model for implementation and application of QC's was synthesized from a review of literature. Data collected through qualitative research were used to describe the implementation and application of QC's in the Staples and Little Falls districts. A survey of available QC members in each district yielded an evaluation of the effectiveness of the implementation and application of QC's in each district. Survey results were statistically analyzed to determine whether a significant difference between the Staples and Little Falls districts QC effectiveness existed.

FINDINGS: A t-test of the responses to a survey item in which respondents evaluated whether QC's made a significant difference in the operation of schools yielded a significant difference between the two (2) schools.

SUMMARY: Implementation and application of QC's can be guided by a model describing optimal procedure. The implementation and application which most closely resembles the model seems to be a positive influence and evaluation of effectiveness by QC participants.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1987
Gerald Wedlund, Chairperson

A SURVEY OF ATTITUDES OF ADMINISTRATORS OF SMALL, RURAL HIGH SCHOOLS IN MINNESOTA REGARDING THE IMPLEMENTATION OF COMMUNITY SERVICE IN THE HIGH SCHOOL CURRICULUM

Faith Rudnitski

Recent educational reform reports advocate implementation of community service opportunities in the high school curriculum. The benefits to students of adopting this curriculum include opportunities for students to make a contribution to society, extend and apply classroom learning, explore career options, and develop personally. Society also benefits from implementation of community service through the service provided, the development of citizenship, improved attitude and morale at school, and long term societal savings resulting from reduced social welfare program expenditures.

The purpose of this study was to survey the opinions of administrators of small, rural high schools in Minnesota regarding the implementation of community service curriculum under the proposed Board of Education Youth Service Learning rule. Administrator opinions were compared on the basis of school size, presence or absence of a cooperative agreement for academics, and the distance of the school from the nearest agency coordinating volunteer service. Eighty of the 120 administrators surveyed responded to the Survey of Principal's Attitudes Regarding Community Service Curriculum, an instrument developed by the writer. The survey instrument included items to measure administrator opinions regarding the merit of community service curriculum, rate the level of concern regarding the ten potential concerns about implementing community service curriculum, and rate the probability of implementing community service curriculum under five circumstances.

This study revealed that a majority of the respondents agreed that the concept of community service curriculum had merit. Of greatest concern to the respondent of the ten items listed were supervision of students at volunteer sites and time within the day for student volunteerism. The circumstance under which a majority of the administrators rated the probability of implementing community service curriculum the highest was if the curriculum were part of state

requirements for a comprehensive high school and the Legislature provided funds for implementation. Significant differences in rating of items of concern on the basis of absence or presence of a cooperative agreement for academic purposes were revealed for concerns about exploitation of students, supervision of students while at the volunteer site, and benefit of the program to students.

Recommendations based on the study include use of the study results by the Board of Education in the decision-making process regarding adoption of the Youth Service Learning rule. In the event that the rule is adopted, an extensive information dissemination program and categorical funding support were recommended.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1988

Gary A. Dill, Chairperson

PERCEIVED EFFECT OF SCHOOL-BASED MANAGEMENT ON STAFF MORALE IN SELECTED SCHOOLS

Bradley J. Sanderson

PROBLEM: Do the principals and teachers of two Minnesota public schools perceive a philosophy of school-based management (SBM) as having an effect on staff morale?

PROCEDURE: A data-based search was conducted and available literature was reviewed. Information regarding school-based management and its perceived effect on staff morale was presented. A case study was conducted to investigate the impact of SBM on staff morale. Based on the review of the literature and the data gathered through the case study, conclusions and recommendations were made.

SUMMARY: A review of the literature established that school-based management refers to increased authority at the school site. In the operation of SBM programs decisions regarding budget, curriculum, and personnel are decentralized, or made at the school site rather than the central or district office. Any plan to strengthen teaching as a profession must provide formal structures for ensuring that teachers are empowered to be involved in the process of making decisions which affect them. "Only by involving people in their own professional destiny can real concern, creativity, and initiative be stimulated, and job satisfaction achieved" (Wiesner, 1987, p. 24). Data from the questionnaire indicated that the respondents felt that a philosophy of SBM could affect the morale of a school staff.

CONCLUSION: A review of the literature and the data gathered from the two Minnesota schools in this study supports the following conclusions. Teaching as a profession must be strengthened in order to build positive staff morale. The philosophy of SBM strengthens the professionalism of teaching through teacher empowerment and involvement.

APPROVED BY RESEARCH COMMITTEE, MARCH 1991

Elaine L. Leach, Chairperson

A STUDY OF PARTICIPATIVE DECISION MAKING IN SELECTED CENTRAL MINNESOTA ELEMENTARY SCHOOLS

Mary Jo Schmid

PURPOSE: This thesis is a study of the level of participation in decision making elementary school teachers of central Minnesota maintain within the technical and managerial domains of schools. The study also examines the correlation

between participation in decision making and job satisfaction experienced by teachers. Three research questions are addressed.

1. To what extent are elementary teachers currently involved in the technical and managerial decisions in the schools in which they are employed?
2. To what extent do elementary teachers desire participation in making technical and managerial decisions in the schools in which they are employed?
3. Does the level of participation in decision making effect the job satisfaction experienced by elementary teachers in their current teaching position?

PROCEDURE: This study was supervised under the Department of Educational Administration of St. Cloud State University in partial fulfillment of the degree of Master of Science in Elementary School Administration. It is a limited study based on a survey done of teachers in elementary schools drawn from central Minnesota. Research was done to identify the perceptions of teachers regarding their actual involvement in decision making and their desired level of decision making in the schools in which they are currently employed. A correlation is also drawn between the level of decision making involvement and the level of job satisfaction experienced by teachers. The study also involved a review of the literature related to participative management and participative decision making in public and private industries.

SIGNIFICANCE: Within a school district the decisions concerning areas of management, supervision, and instruction are made by school administrators as representatives of the school board. Research indicates that direct employee involvement in decision making results in decisions which are direct and specific. Employee involvement in decision making has been shown to promote greater job satisfaction, motivation, and commitment to the decisions made. Participative decision making should be considered for use in schools in an effort to promote quality decision making and cooperative relationships between administrators and teachers.

FINDINGS AND RECOMMENDATIONS: The findings of this study indicate that elementary teachers perceive themselves as having limited involvement in decision making within the technical and managerial domains of the schools in which they are currently employed. The findings also report that teachers desire greater participation in decision making.

A measurement of job satisfaction, also in the study, is correlated with the level of participation in decision making. This suggests the greater the teachers' involvement, the greater their job satisfaction.

Due to these findings and information in the literature review, it is recommended that school administrators evaluate participative management and decision making to determine under which circumstances implementation is feasible.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1987

Gerald Wedlund, Chairperson

IDENTIFYING AND COMPARING ATTITUDES TOWARD SCHOOL ISSUES BY INTERNAL AND EXTERNAL PUBLICS

Erin J. Suemnick

PURPOSE: Exploring the processes involved with conducting a local public opinion poll, this field study surveyed attitudes toward public school issues. Three research questions were investigated.

1. What attitudes exist within the internal publics of a public school system and among the external publics in a community regarding public school issues?
2. How do internal and external public attitudes toward school issues compare to national baseline data?
3. How can processes involved with identifying attitudes be used to obtain regular updates of valid data to assist school officials in decision-making?

PROCEDURE: Under the supervision of the Center for Educational Administration and Leadership at St. Cloud State University, this study identified steps involved in conducting a local public opinion poll. Adapting national education polls, the researcher surveyed local teachers' and public's attitudes in an upper midwest community. Results were compared to 1989 Gallup and Phi Delta Kappa findings.

SIGNIFICANCE: To be responsible and responsive to the public, it is necessary for educational leaders to assess attitudes of a community regarding the local education program. A systematic sampling technique will provide school officials with data to assist in decision-making and long-range planning.

FINDINGS: Paralleling national findings, local teachers believe they greatly contribute to the general good of society, yet perceive themselves as holding positions of least prestige or status in their communities. They favor a state board examination requirement and teacher control of the curriculum, but oppose extending the school day or year.

Local and national teacher attitudes differed regarding problems facing schools, desirability of teaching, and grading the public schools. Locally, overcrowding is stated as the biggest problem, compared to discipline in the nation's schools. Local teachers rate the desirability of teaching and their schools more favorably than teachers in the national survey.

Findings revealed similarities between local and national public attitudes regarding why people value education, influences on the young, problems facing schools, extending the school day and year, and requiring community service.

The local public believed small classes greatly affect the achievement or progress of students, yet are less willing than the nation's public to pay higher taxes to fund such programs. Local schools received higher grades than schools in the national survey.

It is recommended that school officials conduct local opinion polls by defining purposes, organizing staff, developing plans, determining methodologies, constructing data-gathering instruments, training interviewers, gathering and analyzing data, preparing reports, and publishing results. Data obtained from a systematic surveying process will serve as a valuable tool for school improvement.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1990
Elaine L. Leach, Chairperson

IS RESEARCH REGARDING CLASSROOM COLORS BEING CONSIDERED IN NEW ELEMENTARY SCHOOLS IN MINNESOTA

Galen J. Swoboda -

PROBLEM: The purpose of this study was an attempt to determine if the people who influence the color selection of school classrooms are listening to what researchers say about the importance of wall color.

RESEARCH DESIGN: Data for the study were collected by a questionnaire which was mailed to the 16 architectural firms who built the 27 elementary schools in Minnesota since 1980. A cover letter, the questionnaire, and a self-addressed, stamped envelope were sent to 27 architects from the 16 firms. Returns were received from 24 or 88% of the respondents.

FINDINGS: Based on the analysis of the data, the following conclusions were reached:

1. The architect was the final decision-maker in the room color selection process.
2. Architects made the final choice after considering existing research and listening to the preferences of the owners.
3. Warm (38%), cool (35%), and neutral (27%) colors were chosen for the new elementary schools built in Minnesota in the 1980s.
4. In 16 elementary schools built in Minnesota in the 1980s, classroom color selection corresponded with research on color.

RECOMMENDATIONS:

1. There is a need for additional research on all aspects of the elementary school learning environment, especially color.
2. Architects, as well as administrators, need to have current research findings for making consistent decisions regarding color selection.
3. Due to the difficulty in collecting data on classroom color selection, survey techniques and instruments used in this study should be refined.
4. Guidelines on appropriate colors for elementary schools should be included in the Guide for Planning New and Improved School Facilities in Minnesota.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1990

Elaine L. Leach, Chairperson

KINDERGARTEN CURRICULAR TIME ALLOTMENTS: A COMPARISON BETWEEN SELECTED PROGRAMS AND EXPERT JUDGMENTS

Marsha Ann Theis

PROBLEM: The following research questions were addressed:

1. How much time is spent in various curriculum areas during a school year in full day, daily kindergarten programs; half day, daily programs; and full day, alternate day programs.
2. a) How do the time allotments in full day, daily kindergarten programs; half day, daily programs; and full day, alternate day programs correspond to the suggested time allotments in the document *Kindergarten Excellence: Knowledge and Competencies of Kindergarten Teachers*, published by the Minnesota Department of Education.
b) How do the time allotments in full day, daily kindergarten programs; half day, daily programs; and full day, alternate day programs correspond to how people in Minnesota, who are very knowledgeable about kindergarten, think time should be spent in kindergarten.

PROCEDURE: A questionnaire developed by the writer was sent to twenty-four individuals. Six questionnaires were sent to kindergarten teachers in each of three program options: full day, daily; half day, daily; and full day, alternate day. The remaining six questionnaires were sent to recognized kindergarten experts. The results of the questionnaires were tabulated to determine the percentage of the total amount of time the kindergarten teachers devoted to each of fourteen broad curricular areas. The questionnaires from the experts were tabulated to determine how much time they recommended be spent on each of the fourteen curricular areas. These results were then compared using a two-tailed t-test.

FINDINGS: It was found the three curricular areas with the most time devoted to them in full day, daily were Music/Library/Physical Education, Rest/Recess, Reading; in half day, daily were Music/Library/Physical Education, Reading, Language; in full day, alternate day were Music/Library/Physical Education, Reading, Language.

The kindergarten teachers and the document *Kindergarten Excellence: Knowledge and Competencies of Kindergarten Teachers* differed in their opinion of how much time should be devoted to each of the fourteen curricular areas in the area of Art, Reading, Play, and Mathematics. Art, Play, and Mathematics have less time devoted to them by the kindergarten teachers than "Kindergarten Excellence" proposes, and Reading has more time devoted to it by the kindergarten teachers than "Kindergarten Excellence" proposes. All the kindergarten teachers and the experts disagreed significantly in time allotments in the curricular areas of Reading and Science. The experts thought more time should be devoted to Science and less to Reading.

CONCLUSIONS: Curriculum is often influenced by three factors, the learner, society, and the discipline. This study raises the question of who is advocating for the learner, what role society is currently playing in influencing curriculum, and how the teachers of the discipline are responding. It appears that perhaps no one is advocating appropriately for the learner. Society seems to be having a large impact on kindergarten curriculum, particularly in the area of reading. Teachers are responding to a number of societal factors and need a source of credible leadership. The Early Childhood/Kindergarten section of the Department of Education needs to establish itself as the source of leadership.

The study also addressed areas of possible future study.

APPROVED BY RESEARCH COMMITTEE, NOVEMBER 1987

Gerald Wedlund, Chairperson

ELEMENTARY EDUCATION

PARAGRAPH WRITING IN THE CLASSROOM

Steven J. Auer

Pre and post scores were obtained from 54 fourth grade students to test the hypothesis: that students who participate in the Thea Holtan Writing Process will improve their ability to identify and stay on the topic of a paragraph over those students who do not participate in the Thea Holtan Writing Process.

PROCEDURE: Twenty-seven fourth graders were included in the experimental group and the control group. The experimental group was taught using the Thea Holtan Writing Process and the control group was taught using the traditional language instruction.

The students were given two stories in each of the testing situations and were expected to write one to five paragraphs relating to the topic.

The evaluation procedure included a tally chart to count the number of topic sentences written. The number of times the student wrote a sentence that supported the topic sentence was tallied and the number of times the student wrote a sentence that did not support the topic sentence was tallied.

FINDINGS: In comparing the average number of topic sentences written, the experimental group improved over the control group. The average number of sentences written by the experimental group that supported the topic sentence increased more than the control group. The average number of sentences not supporting the topic sentence decreased more with the experimental group than the control group.

CONCLUSIONS: This study provided evidence that more topic sentences were written, more sentences supporting the topic sentence were written, and fewer sentences not supporting the topic sentence were written when students were taught the Thea Holtan Writing Process over those who were not taught the Thea Holtan Writing Process.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1990

Erma Sentz, Chairperson

REINFORCING PREREADING SKILL DEVELOPMENT IN KINDERGARTEN STUDENTS THROUGH THE USE OF PARENT VOLUNTEERS

Judith Ann Backhaus

One hundred kindergarten students were involved in this study to compare gain scores of prereading skills between an experimental group of 50 students who were assisted by parent volunteers and a control group of 50 students who received no assistance. The study was designed to investigate the hypothesis that development in prereading skills would be enhanced in kindergarten children through the use of parent volunteers in the classroom to aid the children in prereading skill activities. After evaluating the data obtained from the *Encyclopedia Britannica Prereading Skills* subtests, the researcher did not find a significant level of gains to support this hypothesis. Through the use of a Parent Volunteer Survey the researcher received positive feedback from the parents involved concerning the volunteer program.

The researcher recommends that the Parent Involvement Program be continued due to the positive comments from the parents. The researcher suggests that the program be restructured to obtain an optimum level of skill development from the students by altering the tasks in which the parents would be assisting the children. The restructuring should focus the parents' assistance on auditory skill development only if the children continue to have a high level of mastery on their pretests in visual discrimination skills.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1987

Russell Schmidt, Chairperson

AN ASSESSMENT OF THE GLOBAL MINDEDNESS OF EDUCATORS

Zaundra M. Cowger

The purpose of this study was to assess change in the global mindedness of Brainerd Public Schools' K-12 educators during the 1989-1990 school year. The content of the study assessed the:

1. change in global perspectives of staff;
2. change in the staff's awareness level of global issues;
3. extent to which global objectives were emphasized in the classroom.

In addition a comparative study was done in these content areas by grade levels, years teaching experience and foreign travel experience.

The sample for the study was comprised of 52 educators from Brainerd, Minnesota, Public Schools selected using a stratified random process.

An assessment survey from *Global Perspectives in Education, Inc.* was administered as the pretest and posttest. A t-test was performed to measure change between the pretest and posttest period.

The data were analyzed and results showed that no statistically significant differences were found. Overall there was a small increase in the global mindedness of the staff consistent with the goals of phase II inservice program.

The researcher concluded that Brainerd, Minnesota, Public Schools are in need of a strong global education component in their staff development program.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1991

Russell Schmidt, Chairperson

TEACHER LEARNING STYLES AND SELECTION OF STUDENT LEARNING ACTIVITIES

Loretta M. Whalen Danzl

This study investigates whether teachers tend to select learning activities for their students that match the teachers' own learning styles.

Twenty-eight teachers ranked their choices of activities for students. Activities were taken from level one activities in "The Constitution in Style" by Stevie Cardamone who categorized activities according to Gregorc's Model of Learning Styles. The subjects also completed the Gregorc Style Delineator. The subjects' learning styles and their activity choices were analyzed using Chi-square. Analysis showed that dominant learning style was not an indicator of activity choice ($p < .001$). Abstract Random and Concrete Random scores seemed to show a better match than others. Teachers' dominant learning styles and choices of activities for students may be related but the relationship is not strong.

The findings of this study indicate that, in general, teachers select activities that vary across the styles more often than teachers select activities that match their own styles.

APPROVED BY RESEARCH COMMITTEE, MARCH 1990

Russell Schmidt, Chairperson

THE AFFECT OF SULLIVAN PROGRAMMED READING ON A PHONICS-BASED FIRST GRADE READING CURRICULUM

Carol A. (Fredrickson) Embretson

The purpose of this study was to determine if a first grade reading curriculum consisting of the Ginn Reading Program, Total Reading, and Sullivan Programmed Reading could produce a higher level of reading achievement than a curriculum consisting of the Ginn Reading Program and Total Reading.

The population for the study was comprised of 195 first grade students from Independent School District 181 in Brainerd, Minnesota. One group of 97 students had been taught through the use of all three reading programs. The remaining 98 students had used only the Ginn Reading Program and Total Reading.

The Red Level of the Standard Diagnostic Reading Test was administered to the students during the first two weeks of May in 1986. In the statistical analysis, t-test comparisons were made between the test scores for the two groups.

The results of the t-test comparisons showed no difference between the two groups in auditory discrimination and word reading. The advantage for those students using Sullivan Programmed Reading was statistically significant in the area of auditory vocabulary. In addition, there appeared to be a slight advantage for this group in phonetic analysis, reading comprehension, and in a comprehensive total.

It was recommended that a first grade reading curriculum consisting of the Ginn Reading Program, Total Reading and Sullivan Programmed Reading may be worth continuing in Independent School District 181.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1987

Russell H. Schmidt, Chairperson

MICROCOMPUTERS AND COMPUTER-ASSISTED INSTRUCTION IN THE PROCESS APPROACH TO MUSIC EDUCATION

Zala Fashant

TOPIC: This thesis examined the effectiveness of the microcomputer in the process approach to music education. The study involved the music theory program which emphasized the composition and listening skills in a large performing organization which leaned heavily to the performance skill.

HYPOTHESIS: Students receiving music instruction through computer-assisted instruction will score higher on post-test achievement tests than students receiving conventional classroom instruction.

PROCEDURE: The study took place in a large suburban high school in Anoka, Minnesota. A total of 120 students were used in the control and experimental groups in a Solomon Four Group Design.

Each band member's chair position or ability ranking was used to assign them into the sub-groups. The members in the Symphony Band were divided into groups S-1 and S-2. S-1 took only the post-test, while the S-2 group took the pre- and post-test. The Repertory Band members, groups R-1 and R-2 worked with the computer assisted instruction music theory program developed by the Minnesota Educational Computing Consortium. Group R-1 took only the post-test while group R-2 took the pre- and post-test.

The pre- and post-tests consisted of listening, rhythm, and terminology sections. The listening portion of the test was pre-recorded on cassette tape.

FINDINGS: Analysis of the total post-test scores of the Symphony Band versus the Repertory Band revealed no statistically significant differences even though each group had strengths in subscores that were statistically significant.

CONCLUSIONS: The hypothesis was rejected. A clear trend did take place however. Where there were significant subscore differences, the Symphony Band groups scored higher in the listening categories, while the Repertory Band (CAI) groups scored higher in the composition categories. The students who learned by listening to pitches generated by familiar instruments with the fuller overtone series scored higher. With the exception of one skill area, the total time spent on tasks did not relate to the number correct on the post-test.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1986

Russell Schmidt, Chairperson

THE AFFECTS OF THE PIZZA HUT "BOOK IT" PROGRAM ON READING COMPREHENSION, READING ATTITUDES, AND READING HABITS OF ELEMENTARY STUDENTS

Gerard Richard Hoelscher

The purpose of this study was to determine if the "Book It" program improves reading comprehension, reading attitudes, and reading habits of elementary students.

This experiment measured 139 fourth grade students' growth in national curve equivalent (NCE) scores from the Iowa Test of Basic Skills. Attitudes of the experimental group as well as 38 teachers, some of whom used the program and some whom did not, were surveyed.

Students felt the "Book It" program helped them like reading more, but the amount of reading decreased after the program ended. Students reported that the extrinsic motivation of pizza was greater than the intrinsic motivation of reading. The data did not indicate a significant increase in reading comprehension.

The data did not show improvement in reading comprehension; the data did not indicate a change in reading attitude, but the data did show a temporary change (for the length of the program) in reading habits.

The researcher concluded that the program, with minor modifications, is worth using.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1990

Edgar Bavery, Chairperson

A LANGUAGE-EXPERIENCE APPROACH TO MATHEMATICAL PROBLEM SOLVING

Karen M. Holsten

This study's purpose was to determine whether the hypothesis that an instructional intervention of the language-experience, small group process approach to mathematical problem solving would be more conducive to increased problem solving ability.

Researchers contend that small group learning with students working cooperatively in the study of academic materials has led to superior achievement in problem solving and higher level thinking skills.

The study consisted of three classes of third grade students in a suburban elementary school. A pre-test, intervention, post-test design was used with experimental group one; a pre-test, daily problems solved individually, post-test design was used with experimental group two; and a pre-test, post-test design was used with the control group. The intervention consisted of teaching the subjects a sequential strategy for problem solving and how to work in cooperative groups. The procedures were reviewed when the subjects were given a daily problem.

The researcher used pre-test data from the Otis Lennon Test and the total reading and total mathematics portions of the California Achievement Test to determine the comparability of the groups. No significant difference was found among the groups.

A significant difference was found between the groups in the analysis of scores from the whole post-test as well as the individual and group portions of the post-test for the language-experience group.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1988

Russell H. Schmidt, Chairperson

AN ANALYSIS OF THE EFFECTS OF MANIPULATIVES ON THE ACHIEVEMENT AND ATTITUDES OF THIRD GRADE STUDENTS

Deborah A. Jirik

In recent years, the use of a variety of manipulative materials for teaching mathematics in the elementary grades has received considerable support from many components of the education community. However, there seems to be disagreement over the value and effectiveness of such instructional innovations. This study measured the mathematical achievement of third grade students during multi-digit addition and subtraction units in one elementary school in the Elk River District under a method supplemented by manipulatives.

The purpose of this study was to compare the achievement gains made by students who were taught multi-digit addition and subtraction using manipulative materials with the achievement gains made by students not using manipulatives. In addition, change in attitude toward mathematics was also measured.

A pretest-posttest control group design was used. Assessment tests were commercially produced by the Houghton Mifflin Mathematics Company. A researcher-designed attitudinal survey was administered at the beginning and end of the study. T-tests were used to analyze the achievement gains made by students in the two groups.

The data were analyzed and results showed that students taught with the manipulative supplemented program improved their performance at a significantly higher level ($p < .05$) than those taught with strictly the textbook approach. No statistically significant difference was found in the achievement gains based on gender and no change in attitude was found between the two groups.

The researcher concluded that manipulatives are an effective supplement to teaching multi-digit addition and subtraction to third graders.

Recommendations included continuing the use of manipulatives as a supplement to the current textbook, further study and in-service particularly for third through sixth grade teachers and monetary support from the district to purchase additional manipulatives and sound barriers for elementary classrooms.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1990

Russell Schmidt, Chairperson

TEACHING LEARNING STRATEGIES IN A COOPERATIVE LEARNING SETTING

Beverly A. Johnson

The purpose of this study was to determine if mastery and retention are significantly affected by teaching learning strategies in a cooperative learning setting. It also sought to determine student attitudes toward cooperative learning.

Subjects were divided into two groups: control and experimental. The Metropolitan Achievement Test was used to determine there were no significant differences between the groups. Both groups were taught social studies using the same texts, worksheets, and tests. The experimental group was taught learning strategies in a cooperative learning setting. The control group was not. Chapter tests were used to measure mastery and short retention tests, made by the researcher, were used to measure retention. At the conclusion, subjects in the experimental group indicated on a survey whether they preferred to work in a cooperative group or independently and whether they thought they learned more working cooperatively or independently.

Significant differences were found both in mastery and retention of content material that favored the experimental group. In the survey, 87 percent of the subjects preferred working in cooperative groups and thought they learned more working cooperatively. It appears that teaching learning strategies in a cooperative learning setting may positively affect mastery and retention of content. Another possible conclusion is most students prefer working in cooperative groups and think groups help them learn.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1990

Erma Sentz, Chairperson

A COMPARATIVE STUDY OF TWO APPROACHES TO TEACHING FIRST GRADE READING

Sharon K. Kalmoe

The purpose of this paper was to compare the achievement made by first grade students who were taught using the Companion Reading Program with the achievement made by students when taught with Holt, Rinehart, and Winston Basal Reading Program.

Pretest scores from the Boehm Test of Basic Concepts and the Elk River Kindergarten Checklist (letter identification and beginning sounds) were collected for two groups of students. The first group attended first grade in the 1985-86 school year. They received beginning reading instruction using the Holt, Rinehart, and Winston Basal Reading Series. The second group attended first grade in the 1986-87 school year. They received beginning reading instruction using the Companion Reading Program. First graders from both the 1985-86 and the 1986-87 school years were classified into three general ability groups according to pretest measures.

Posttest data were collected for both groups in the spring of the first and second grade years using the Sucher-Allred Reading Placement test and in the fall of the third grade using the Iowa Test of Basic Skills. Reading achievement was determined by comparing mean scores from both groups using the three posttest measures.

At the end of the first grade year, students taught with the Companion Reading Program achieved at a significantly higher level ($p < .05$) than those students taught with the basal approach. At the end of the second year, there was no significant difference between the two groups. At the beginning of the third grade, significant differences in favor of the Companion Group were found on the vocabulary, reading comprehension, capitalization, punctuation, usage, and total language scores on the Iowa Test of Basic Skills. There were no significant differences between the two groups on the spelling subtest.

APPROVED BY RESEARCH COMMITTEE, JULY 1989

Edgar Bavry, Chairperson

THE EFFECTS OF A COOPERATIVE GOAL STRUCTURE VERSUS AN INDIVIDUALISTIC GOAL STRUCTURE ON MATH ACHIEVEMENT AND ATTITUDES

Kathleen G. Kohnen

This study examined student achievement and attitude in a mixed gender and ability cooperative condition and individualistic condition. The study consists of 42 low, average, and high ability fifth graders, of which 22 were males and 20 were females. The 42 students were stratified randomly to the cooperative condition and the individualistic condition. Equal percentages were assigned to each group by gender and ability. The students in both groups received regular classroom instruction for seven weeks. After the classroom instruction and discussion the individualistic condition worked entirely on their own asking questions only to the teacher, while the cooperative condition worked in mixed ability and gender groups of three together.

An achievement pretest and post test were given on addition and subtraction and a pretest/post test were given on problem solving. Both groups took the test individually. The results were statistically significant indicating a higher achievement gain for the females in the cooperative condition as compared to the females in the individualistic condition. The results suggested, although they were not statistically significant, that the achievement in mean test point gain was higher for the cooperative condition.

An attitude survey was given to all students in the cooperative condition and the individualistic condition. Both groups completed the survey individually. The results indicate that students in the cooperative condition had a more positive opinion of their mathematical capabilities, were more enthusiastic and motivated during math class, and they were more positive about learning addition and subtraction in small groups.

APPROVED BY RESEARCH COMMITTEE, MAY 1991

Linda Scott, Chairperson

LOGO COMPUTER INSTRUCTION AND ITS RELATION TO TEACHING READING SEQUENCING

Kathleen D. Kuchar

PROBLEM: LOGO computer instruction is being used in many classrooms today. It is said to aid students in developing critical thinking and problem solving skills. This research was done to see if the logical thinking skills developed by using LOGO contributed to the skill students had in solving Reading sequencing problems.

PROCEDURE: Three fourth grade groups were selected for this study. Experimental group one was 19 subjects from the fourth grade classroom at New Munich Elementary, and Experimental group two was 25 subjects from the fourth grade classroom at Melrose Elementary. The control group was two classrooms of 45 subjects from Sauk Centre Elementary. All three groups were pretested with a series of reading sequencing tasks at the beginning of the school year. Experimental group one was given an intervention of fifteen hours of LOGO instruction and Experimental group two was given seven and a half hours of LOGO instruction. At the end of the school year, all three groups were posttested with the same series of sequencing tasks. A t-test was used to compare the pretest scores to the posttest scores to determine if there was a statistically significant improvement in the reading sequencing task scores at a $p \leq .05$ level of significance.

RESULTS: There was no convincing support of any improvement in the posttest reading sequencing tasks due to the LOGO computer intervention.

APPROVED BY RESEARCH COMMITTEE, FEBRUARY 1987

Russell H. Schmidt, Chairperson

ANXIETY LEVELS OF SIXTH GRADE STUDENTS

Peggy Bigelow Lodewyk

The purpose of this study was to determine if the anxiety levels of sixth grade students in a K-6 school as compared to a 5-6 middle school were significantly different. Measurements of anxiety levels in November and May reflected the two groups' similarities and/or differences in anxiety levels as they made the transition from sixth to seventh grade.

Approximately 50 sixth grade students enrolled in a District 742 K-6 elementary school and approximately 50 sixth grade students enrolled in a District 742 5-6 middle school were administered the A-Trait and A-State Anxiety Inventory for Children in November and May. The A-Trait scale measures relatively stable individual differences in anxiety proneness, that is, differences between children in the tendency to experience anxiety states. The A-State scale is designed to measure transitory anxiety states, that is, subjective consciously perceived feelings of apprehension, tension, and worry that vary in intensity and fluctuate over time. Scoring was done by computer at Academic Computer Services, St. Cloud State University, St. Cloud, Minnesota.

It appears that sixth graders from the 5-6 school have a slightly higher anxiety level throughout the year than the students from the K-6 school. No significant differences were found in anxiety levels between gender at either school. Measurements of anxiety levels during the fall and spring of the year tend not to make a significant difference.

APPROVED BY RESEARCH COMMITTEE, FEBRUARY 1991

Erma Sentz, Chairperson

THE AFFECTS OF THE LIONS-QUEST SKILLS FOR ADOLESCENCE PROGRAM ON SELF-PERCEPTION

Darlene A. Primus

PURPOSE: The purpose of this study was to investigate the affects of the Lions-Quest Skills for Adolescence program on the self-perception of sixth grade students.

METHOD: Two control and two experimental classrooms were used in the study. Treatment for the experimental groups consisted of the Lions-Quest Skills for Adolescence program. Measurements of self-perception were taken for all four groups during the third week of the school year and again during the second to the last week of the school year using the Self-Perception Profile for Children.

FINDINGS: A one-way analysis of variance of the mean scores of the four groups by subscale showed no statistically significant differences at the end of the year. Results did show, however, that the experimental groups made gains on more of the subscales than did the control groups.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1989

Russell H. Schmidt, Chairperson

A COMPARISON OF ATTITUDES TOWARD READING ALOUD

Dan W. Scheer

PROBLEM: The purpose of this study was to determine if parents are meeting their children's preferences on conditions that contribute to the concept that reading aloud to children makes learning to read easier, more exciting, pleasant, and enjoyable.

PROCEDURE: The study involved ninety first, third and sixth grade children and their parents. They were surveyed by means of a questionnaire. These data were collected in the fall of the 1986-1987 school year.

FINDINGS: Children's interest in being read to declined as they progressed through the grades. Parental willingness to read aloud declined once children began to read independently. Parental modeling of the reading process was the main influence on children wanting to learn to read. Mothers were the major participants in the read aloud process, while the fathers' participation was almost non-existent. A retrogression of the importance of reading was evident in families as the children grew older.

Conversation between parent and child was important during and after the reading of a story.

A special location for children's books and a quiet area to read were accommodations parents provided. Desire to engage in a family reading session was minimal.

Children's books were the most influential print materials creating an interest in reading. The public library was not visited on a regular basis, although a family library was important.

Children viewed more hours of television per week than their parents.

SUMMARY AND CONCLUSIONS: Parents assume that when children become independent readers there is little or no reason to continue reading aloud. Positive attitudes toward reading aloud decline in the higher elementary grades. As the frequency of reading aloud diminishes so does the duration. Fathers need to increase their participation in the read aloud process. Parental modeling of the reading process influenced children to want to read.

Dialogue during reading aloud is meaningful and important. Families had little desire to entertain household reading sessions.

Children's books were the most influential print materials enhancing a desire to read.

Children had a higher incidence of television viewing than their parents.

APPROVED BY RESEARCH COMMITTEE, MAY 1988

Edgar A. Bavery, Chairperson

USING MNEMONICS IN FUTURE PROBLEM SOLVING

Allen Lloyd Stoeckman

Mnemonics have been used in the past and in the present to aid students in the recalling of information. Today education points to the need for students to solve problems. Future Problem Solving (FPS) has become an activity many schools sponsor for students to participate in to exercise a student's creative energies. If students used a mnemonic to cue information in the Future Problem Solving activity, would students generate a more flexible list of problems and/or solutions? Would it be possible to combine the rigidity of mnemonics with the creative spontaneity of Future Problem Solving?

This study researches the history of Future Problem Solving and the background and effectiveness of mnemonics. It also contains the results of a study done with 56 fifth grade students in which a mnemonic was used during a Future Problem Solving activity.

The results of the study indicated that no statistically significant differences existed between teams using a mnemonic in FPS and teams not using a mnemonic. However, mean scores of the flexibility portion of FPS did show a higher score for teams using a mnemonic.

APPROVED BY RESEARCH COMMITTEE, NOVEMBER 1990

Steve Hornstein, Chairperson

AFTER 45-15: TEACHERS' OPINIONS

Michael P. Walsh

PROBLEM: In 1986, after seventeen years, the Fairview Elementary School staff of Mora, Minnesota, switched from the 45-15 plan to the traditional school calendar. This study hypothesized that, after one year on the traditional school calendar, the staff preferred the traditional school calendar to the 45-15 plan.

PROCEDURE: A thirty-two statement opinionnaire was distributed to the staff. They were asked rate statements about the school calendar, environment, job performance and self-esteem, post Bachelor degree schooling, physical and psychological well-being, peer relationships, student relationships, family relationships and salary.

FINDINGS: Eighty-seven percent of the staff preferred the traditional school calendar over the 45-15 plan. The staff reported that their preferences for the traditional school calendar extended into each of the nine areas surveyed.

APPROVED BY RESEARCH COMMITTEE, MARCH 1988

Edgar A. Bavery, Chairperson

THE AFFECT OF SELECTED TEACHER ACTIVITIES ON FIRST GRADE STUDENTS' SELF-ESTEEM

Becky L. (Johnson) Wicklund

The purpose of this study was to assess if students' self-esteem could be affected by teacher activities that are designed to promote self-esteem.

The population for the study was comprised of 57 first grade students from Brainerd, Minnesota. One group of 26 students had participated in the self-esteem intervention activities. The remaining 31 students had not participated in the self-esteem intervention activities.

The Self-Concept Picture Inventory was administered to the students during the third week of September in 1989 and then again during the second week of May in 1990. In the statistical analysis, t-test comparisons were made between the change in individual's scores for the two groups.

The result of the t-test comparisons showed that the group of students presented with the self-esteem intervention activities were statistically significantly greater, $t(56) = 4.84$, $p < .001$.

The researcher recommended that all first grade classrooms implement these teacher activities that have been designed and demonstrated to improve students' self-esteem.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1990

Russell H. Schmidt, Chairperson

HEALTH EDUCATION

THE EFFECTIVENESS OF THE PRIMARY GRADES HEALTH CURRICULUM PROJECT ON THE COGNITIVE AND AFFECTIVE LEARNING OF SELECTED MINNESOTA K-3 GRADERS

Nancy Jo Hambleton-Trites

The Primary Grades Health Curriculum Project (PGHCP) is the K-3 portion of a popular, multimedia, hands-on K-7 health curriculum entitled "growing Healthy." A quasi-experimental nonequivalent control-group research design was used to assess the effectiveness of the PGHCP on the cognitive and affective health learning of primary grades students exposed to this curriculum. Students in three school districts spanning grades K-3 ($n = 42, 29, 42$, and 34 respectively) which were using the PGHCP comprised the experimental groups. Students in comparable grade K-3 classrooms ($n = 30, 36, 33$, and 33 respectively) from two school districts not using the PGHCP served as the control groups.

Using instrumentation refined for the curriculum's evaluation during its field testing phase, students were pre- and post-tested for both cognitive and affective health learning. Change scores between the experimental and control groups at each grade level were analyzed by means of t-tests. With the exception of the cognitive realm in grade 2, no significant differences were found between the experimental and control groups for any of the variables ($p < .05$). These results suggest that the PGHCP, as measured and delivered, was neither more nor less effective in eliciting gains in health knowledge and attitude than the control group experience of not using the PGHCP. However, further research is needed to fully determine the curriculum's full impact.

APPROVED BY RESEARCH COMMITTEE, SEPTEMBER 1988

Frank P. Osendorf, Chairperson

DETERMINING THE HEALTH INTERESTS OF K-6 STUDENTS IN A CENTRAL MINNESOTA SCHOOL DISTRICT

Janna M. LaFontaine

A health interest survey was conducted on a total of 932 students in grades K-6 in a Central Minnesota school district. The K-3 survey had 27 items to which the students responded with a "yes" or "no" answer concerning their interests. The fourth and fifth grade survey had 29 items that were answered on a scale of very interested, somewhat interested and not interested. The sixth graders answered a 52-item survey, also on the three-point scale.

Determining health interests can be an important component in developing health education curriculum, reviewing health education programs and allowing the students input into their own health education. Teaching students topics they are interested in will enhance the learning experience. Based on the school district's eight exit outcomes (specific learner outcomes) in health education, the student responses to the survey were categorized by degree of interest for each topic. The survey responses were further categorized by grade and gender.

Chemical health and environmental health stand out as the two areas that are of high interest to most grades. Mental health is considered of low interest by four of the seven grades surveyed.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1990

Rodney Dobey, Chairperson

INFORMATION MEDIA

A SURVEY OF PLANS AND USES OF INFORMATION TECHNOLOGIES IN DELIVERING PRIVATE HIGHER EDUCATION IN THE MINNESOTA REGION

Stephen B. Erickson

PROBLEM: This field study proposed to collect information on the current and future usage of information technologies in private higher education institutions in an eight state region including Minnesota. The stated problem was to determine the current and future level of involvement to similar midwestern state private colleges in acceptance and implementation of various technologies in distance education. The five questions to be answered provided the research basis of the study. They posed questions concerning types of colleges using information technologies, kinds of technologies used, instructional applications, factors affecting utilization of technologies, and special features and plans the colleges had for using information technologies.

The survey of literature provided support for the developing nature of educational technologies and the importance to incorporation in distance education endeavors.

PROCEDURES: The survey for the collection of data was based on two prior studies. The first study, which was the model, was prepared and administered by Lewis and Markwood for the Western Interstate Commission for Higher Education in 1985. That study was administered to all colleges in a thirteen western state area. The second study, based on the original model, was conducted by the Minnesota Higher Education Coordinating Board in 1986. Thirty-four private colleges in Minnesota, Iowa, Missouri, North Dakota, South Dakota, Montana, and Wisconsin were surveyed in August, 1987, for this field study. There were nineteen responses for a 55.9 percent return rate.

CONCLUSION: The survey discovered information for the questions to be answered. Many schools are using various educational technologies and plan to incorporate these into distance educational projects. The limiting factors on future use was indicated as financial and technical support. The computer was the primary technology used with the traditional media of audio and video cassettes also being used by the private schools surveyed. From information gathered in the survey, the data showed that St. Scholastica has started to address the issues posed in the research questions. St. Scholastica compares with other private colleges in the region and should continue in its efforts toward incorporation of information technologies.

APPROVED BY RESEARCH COMMITTEE, MARCH 1988
Phyllis Lacroix, Chairperson

AN ANALYSIS OF THE USE OF VIDEODISC TECHNOLOGY IN SELECTED TRAINING AND DEVELOPMENT PROGRAMS IN THE UNITED STATES

John F. Gindele

PROBLEM: This study investigated how and to what extent trainers used videodisc technology to support adult learning programs in business and industry. It examined seven objectives: (1) the degree of videodisc technology used, (2) extent of interactive use, (3) ways videodiscs were used, (4) advantages of videodiscs, (5) disadvantages/barriers, (6) sources for learning about videodisc technology, and (7) future use and trends.

PROCEDURE: The data for this study were obtained by the use of a survey instrument mailed to 191 trainer/members of the American Society for Training and Development. Information for the instrument was provided through a review of the literature, a critique by an advisory committee, and pilot test. An 84 percent survey return rate yielded a 68 percent usable response.

FINDINGS: Companies in 41 states employed a mean of 14 trainers per company. Thirty percent of the training departments used videodiscs (of which 86 percent were interactive). Trainers used videodiscs as a primary training tool nine percent of the time in one year. Most of the technology was purchased off-the-shelf with Levels II and III predominantly used. Videodiscs were used: (1) to upgrade skills of current staff, (2) in marketing and sales, (3) to train new personnel, (4) to train customers, and (5) in archival/reference. Instruction involved: (1) simulation, (2) demonstrations, (3) tutorials, (4) problem solving, and (5) drill and practice.

Most trainers (56 percent) were optimistic about videodisc usage in technical training and see costs declining and the number of interactive discs increasing. Features such as self-pacing, random access branching, and rapid retrieval of information were rated quite important. Most trainers believed videodisc usage helped motivate adult learners, most users enjoyed learning with videodiscs, and they learned at a faster rate. One-third believed users retained knowledge longer, and that videodisc usage may widen the knowledge gap between the "haves-and-have-nots". There was no consensus on cost-effectiveness of this technology. Forty percent of trainers were pessimistic regarding future use of videodiscs in their departments. Barriers to videodisc usage were costs, limited software (discs), and lack of hardware standardization.

Trainers learned about videodisc technology primarily through written materials, conferences/trade exhibits, and seminars/workshops/in-service. Publications used were the Training & Development Journal, Training, E-ITV, and T.H.E. Journal.

Fifteen percent of trainers foresee major expansion of videodisc technology in their training departments during 1988. For companies not now presently using videodiscs, 36 percent anticipated usage within five years, 23 percent did not, and 41 percent were uncertain.

SUMMARY AND CONCLUSIONS: Presently, videodisc technology does not enjoy wide use by trainers in business and industry. When certain issues become resolved, its use may begin to increase. Seven recommendations were made.

APPROVED BY RESEARCH COMMITTEE, MARCH 1988

Fred E. Hill, Chairperson

AN ANALYSIS OF THE USE OF VIDEODISC TECHNOLOGY IN GRADUATE LIBRARY AND INSTRUCTIONAL MEDIA STUDIES IN NORTH AMERICA

Joseph G. Gindele

PROBLEM: The problem was to analyze and evaluate the extent to which videodisc technology was being taught to students as an instructional delivery and/or information storage and retrieval device in graduate library and instructional media studies classes. These classes were those held in public and private library science and media education departments in selected colleges and universities in North America.

PROCEDURE: A 21 question survey was developed to solicit data relative to videodisc use and to answer eight stated objectives. Topics addressed: (1) general information, (2) present videodisc use, (3) sources of knowledge about videodisc technology, (4) impact and trends of videodisc technology on archives/instruction/instructors, (5) obstacles/barriers to videodisc technology instruction, and (6) successes and problems.

The population represented 304 departments and instructors who taught "videodisc" or "storage and retrieval". After pilot testing 22, 150 of 282 remaining departments were sent revised questionnaires. Data was gathered, analyzed, evaluated, and reported.

FINDINGS: Ninety-one percent (136) of the 150 surveys mailed out were returned as valid and useable (51 "Library" departments [38%] and 85 "Media" departments [62%] responded). Seventy-two percent of the combined departments own or have access to videodisc players. Of the departments that offer videodisc instruction, half began instructing students in videodisc technology since 1985 (90% since 1981). At the undergraduate level this took place in "Introduction to Media" classes; at the graduate level, the classes offered were more specialized per department. Students received instruction primarily through lecture, with NO hardware demonstration, and with no required textbook. Funding was the main barrier to videodisc instruction.

Library and Media teacher educators learned about videodisc technology through formal classwork and periodicals. Optical disk impact in higher education, on library archives, information storage and retrieval, may be great by year 2000, with probably less impact by videodiscs on delivery of instruction (unless distance education grows considerably). Slides and magnetic discs, but especially microforms and magnetic tapes, may be replaced by videodisc or optical disk technology by year 2000 (books in general--not likely). College/university instructors are not expected to lose their jobs to videodisc delivery of instruction.

SUMMARY AND CONCLUSIONS: Videodisc instruction is being offered in 74 percent of graduate library and media departments in North America, with 12 percent of the departments offering students much to very much instruction, 27 percent some instruction, 35 percent very little to little instruction, and 26 percent no instruction at all. More instruction needs to be offered in this area. Eleven recommendations were made.

APPROVED BY RESEARCH COMMITTEE, MARCH 1988

Fred E. Hill, Chairperson

DEVELOPMENT OF A DESIGN AID FOR INSTRUCTIONAL VISUALS

Kersten Nix-Thellin

PROBLEM: How might research on aspects of "visual literacy", perception, and learning be used by instructional designers to create effective instructional visuals? Approaching this problem through careful review of an increasingly diverse body of research offers some guiding principles, but how might they be synthesized to form a useful visual design tool? This study offers one approach to using visual research to inform the designer's practice.

PROCEDURE: The author combined several descriptive methods for classifying visual literacy, visualization, and associated concepts. By uniting the work of Stewart, DeSantis and Pett, and Griffin and Whiteside, the researcher created a matrix which illustrated the relationships between these visual concepts. This effort led to the development of a practical design aid for practitioners to use when selecting and designing instructional visuals.

FINDINGS: The wide diversity of relevant concepts affirmed the need for better understanding of them and their relationships. Previous attempts to do so by other researchers, while of interest, were not focused in a way that could inform practice.

Similarly, existing visual design tools and classification systems were not adequately grounded in relevant research to assure effective instruction or utilization.

CONCLUSIONS: Based upon the findings from a review of literature, the author concluded that there was a need for instructional designers to be aware of and to apply theories of visual design.

The matrix created made comprehending the concepts involved much easier, so that educators could be aware of these theories. In order to apply these same theories the author concluded that instructional designers would benefit from an aid for designing visuals.

The researcher proceeded on the premise that a useful design aid would be easy to use, describe the visual, and offer suggestions for improvement of existing and newly created visuals as well. The product of this study, the Design Aid for Instructional Visuals, fulfilled that need.

APPROVED BY RESEARCH COMMITTEE, MAY, 1990

Dennis Fields, Chairperson

HOW METACOGNITION CAN CHANGE STUDENT LOCUS OF CONTROL AND SELF-CONCEPT AS A THINKER

Beth M. Rutz

PROBLEM: The rapid increase of information in today's society has led to an information explosion. Since information changes daily, students need to learn effective strategies for digesting it.

PROCEDURE: Forty-three low ability readers in grades six, seven and eight were taught how to use metacognitive skills during seven 43-minute class periods. Each student took a pretest, posttest, and delayed posttest which measured changes in locus of control and self concept as a thinker.

FINDINGS:

1. Teaching metacognitive techniques produced a change toward internal locus of control in eighth grade students.

2. Teaching metacognitive techniques to externally-controlled students promoted a change toward internal control
3. Metacognitive learning strategies were not retained without teacher follow-up.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1989

Phyllis Lacroix, Chairperson

MIDDLE SCHOOL/JUNIOR HIGH SCHOOL EDUCATION

ADOLESCENTS' CONCEPTS OF POPULARITY AND UNPOPULARITY, COMPARING AMERICAN AND EGYPTIAN ADOLESCENTS

Azza Ahmed Eldefrawi

The purpose of this study was to conduct a comparison between American and Egyptian adolescents' concepts of popularity and unpopularity. The study, which included students from both countries grade six through grade twelve, also assessed whether concepts of popularity and unpopularity changed or differed from one age group to the other.

Criteria for popularity and unpopularity were derived from a previous study conducted by Hans Sebald. In this study subjects described each one of these criteria as "popular," "not popular," or "not important". Statistical differences in the responses of American and Egyptian adolescents were the basis for the comparisons.

Results revealed that American and Egyptian adolescents agreed upon four criteria as characteristics of a popular person. These criteria were: having a good reputation, being friendly and courteous, not imitating others, and not smoking. Three other criteria were agreed upon as characteristics of unpopularity. These criteria were: not liking to be with people, having a bad personality, and not being friendly.

Statistical differences in the responses between American and Egyptian adolescents were revealed on the following criteria: participating in sports, being trustworthy and honest, being helpful and caring, being too shy or too quiet, keeping up with fashions, having a good personality, being cheerful and fun to be with, being ugly or not good looking, being traditional in one's beliefs, non-conformity, not having a boyfriend or a girlfriend, wearing unfashionable clothes, being relaxed and comfortable to be with, being good looking, being stupid, giving oneself too much importance, studying too much, having money, conformity, and never studying.

Comparisons by grade, which were conducted separately within each culture, gave inconclusive results since differences were dispersed and varied. Results indicated that concepts of popularity and unpopularity, for American and Egyptian adolescents, did change with grade (thus, age) in relation to some of the criteria only. Most of the pronounced changes seemed to occur during grade nine for American adolescents and during grades nine and ten for Egyptian adolescents.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1986

Russell Schmidt, Chairperson

MEETING THE NEEDS OF EARLY ADOLESCENTS IN MINNESOTA MIDDLE LEVEL SCHOOLS

Nancy D. Johnson

Surveys were sent to the building principals of 90 Minnesota middle level schools containing seventh and eighth grade students, 30 each from middle schools, junior high schools, and 7-12 secondary schools. The purpose of the survey was to assess the programs being offered early adolescents, to evaluate their frequency, quality, and success; and to establish if there was a difference in the way early adolescents were treated in relationship to the grade arrangement of the school they were attending. Survey questions covered five areas of a strong middle level school: school climate, student development, curriculum, learning and instruction, and staff.

FINDINGS: The 7-12 secondary schools did the least of the three grade groupings at meeting the needs of early adolescents. Analysis of variance showed secondary schools statistically scored significantly below middle schools and junior high schools in eight areas. There was not a significant difference in the way middle schools and junior high schools were meeting the needs of early adolescents.

CONCLUSIONS: According to the survey results, a separate school for early adolescents, regardless of its label as a middle school or junior high school, is a better way to meet the unique needs of youngsters ages 10-14 than a 7-12 secondary school.

APPROVED BY RESEARCH COMMITTEE, MAY 1988

Larry Putbrese, Chairperson

MAINSTREAM TEACHERS BARRIERS IN MODIFYING CURRICULUM FOR LEVEL TWO-THREE MIDDLE LEVEL STUDENTS

William F. Kruschel

PROBLEM: This study was concerned with the barriers regular classroom teachers have in modifying curriculum for level two and three students. Specifically, this study surveyed teachers to see which techniques they are currently using, and which techniques they are not using. The study attempted through a series of questions to find out why certain techniques were used more than others.

PROCEDURE: A survey was developed that was distributed to regular middle level teachers and support staff in the Rum River Cooperative. The Rum River Cooperative is located in east central Minnesota, and is comprised of nine school districts, with offices located on the grounds of Cambridge Regional Human Service Center in Cambridge, Minnesota. The survey dealt with many techniques used in modifying curriculum for level two-three students. The teachers responded as to whether or not they are currently using the technique. The teachers were also asked to respond to a series of questions providing them four responses ranging from often to never on the first set, to strongly agree to strongly disagree on the second set.

RESULTS: The overall results of the survey show that a majority of the respondents feel it is appropriate to modify their curriculum for level two-three students. However, a majority of them are modifying their curriculum on just an occasional basis. The reasons given for not modifying curriculum range from: not having enough contact time with the special education teacher, not having enough help from the special education teacher, and not having sufficient time during the day. Another aspect is a philosophy that special education students would be better serviced in a structured special

education classroom. Two other areas of concern were not having the proper training in modifying curriculum for level two-three students and the feeling that a smaller class size would allow the mainstream teacher to modify curriculum for level two-three students.

APPROVED BY RESEARCH COMMITTEE, MAY 1989

Larry Putbrese, Chairperson

A STUDY OF ACHIEVEMENT AND CRITICAL THINKING OF HIGH SCHOOL JUNIORS

Jo M. Tennison

The purpose of this study was to determine whether a correlation exists between school achievement and critical thinking of high school juniors.

The sample for this study was 82 students from the junior class of Technical High School, St. Cloud, Minnesota, in May, 1986.

The class standing of each student in the sample was used as the measure of individual achievement in this study. The results of the *Watson-Glaser Critical Thinking Appraisal, 1980, Form A* were used as the measure of the students' critical thinking.

The results of the study clearly indicated that a positive correlation exists between achievement and measures of critical thinking in this sample. The data also indicated that 31 percent of the variance in class standing had been related to the variance in critical thinking scores and the remaining 69 percent must be attributed to factors that were not considered in this study.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1986

Bruce Romanish, Chairperson

MINNESOTA MIDDLE SCHOOL SURVEY, 1989

Kris Wilger

PROBLEM: Since the 1984 survey was conducted, will the number of middle schools functioning in the state of Minnesota have risen? How are the schools organized? What reasons were given for establishing a middle school? What courses are offered?

PROCEDURE: A letter was sent out to the superintendent of each school district in Minnesota requesting them to fill out an enclosed postcard. The postcard helped determine whether or not there is a middle school functioning in the district. If a middle school is functioning in the district, the name of the person most qualified to answer the survey instrument was requested.

Once the determination had been made that a middle school exists in the school district and the name of the qualified person received, a questionnaire was mailed to that individual.

FINDINGS: A return of 75 percent of the postcard survey revealed 70 middle schools in existence, which is an increase in comparison to the 1984 survey. The schools are organized in a variety of grade configurations encompassing grades five-nine. The most commonly found configuration is six-eight. A variety of reasons were given for establishing a middle school. The two most frequently given are to provide a better instructional program for children of this age group and to facilitate overcrowdedness in another school. A wide range of courses are being offered in the middle schools. Eighty-two percent of the respondents offer an affective education program and 90 percent offer interdisciplinary teaming.

SUMMARY AND CONCLUSION: Many of the Minnesota middle schools are meeting the needs of their students in appropriate ways. The individual and group needs of this unique age group seem to be given increased consideration. The 1989 survey shows an increase in comparison to the 1984 survey in the number of middle schools using interdisciplinary teaming. The number of middle schools offering affective education programs remains unchanged. The programs of some school districts do not appear to differ much from the traditional secondary model.

APPROVED BY RESEARCH COMMITTEE, MAY 1990
Larry Putbrese, Chairperson

PHYSICAL EDUCATION

METABOLIC COST OF ICE SKATING AND IN-LINE SKATING IN DIVISION I COLLEGIATE ICE HOCKEY PLAYERS

Todd R. Carroll

The objective of this study was to compare the metabolic cost of ice skating and in-line skating in Division I collegiate hockey players. Heart rate and oxygen uptake were compared between the two conditions at three skating velocities: 12.5 kmph, 16.5 kmph, and 20 kmph. The order of velocity was randomly assigned to each subject. Twelve members of the St. Cloud State University hockey team volunteered for this investigation. Each subject was tested on two occasions: on-ice (ice skating) and off-ice (in-line skating). Subjects skated for three minutes at each velocity, with heart rate recording and gas collection taking place during the final 30 seconds of each stage. A two-factor, repeated measures ANOVA showed that the chosen velocities affected the two conditions differently for heart rate ($p < .0112$). No interaction between condition and velocity was found for absolute ($p < .4269$) and relative ($p < .1528$) oxygen uptake. In-line skating produced significantly greater heart rate values than ice skating at all three velocities ($p < .05$). In-line skating resulted in significantly greater absolute oxygen uptake values than ice skating at all three velocities. In-line skating also generated significantly greater relative oxygen uptake values at 16.5 kmph and 20 kmph. These results suggest that the metabolic cost of in-line skating is greater than ice skating for collegiate ice hockey players when skating at three velocities similar to those skated during game conditions.

APPROVED BY RESEARCH COMMITTEE, JUNE 1991
David W. Bacharach, Chairperson

A COMPARATIVE STUDY OF INTERNAL AND EXTERNAL LOCUS OF CONTROL AND PERSONALITY TRAITS OF MALE AND FEMALE INDIVIDUAL AND TEAM SPORT ATHLETES

Linda Hietanen-Nelson

Sports can be categorized as an individual sport or as a team sport. Athletes participate cooperatively as a team or as individuals. Overall, athletes participate in sports which satisfy an internal or external motive. One motive may be the athlete's locus of control. The relationship between the athlete and the locus of control may determine sport preference.

The general purpose of this study was to determine if an internal or external locus of control influences athletes to seek individual or team sport competition.

The ability of an individual to maximize her/his potential stems from her/his personality traits. The utilization of trait analysis in an athletic profile may aid in the identification of those most likely to succeed as individual or team sport athletes.

The instrument utilized in measuring the athletes' locus of control was the Rotter Scale of Internal-External Locus of Control (I-E Scale), and the athletes' profiles were developed utilizing the Cattell Sixteen Personality Factor Questionnaire (16PF). An analysis of variance and a multivariate analysis determined the significance ($p < .05$) of the six group comparisons for the I-E Scale and 16PF, respectively.

No significant differences were found between the six groups: male athletes vs. female athletes, team athletes vs. individual athletes, male team athletes vs. male individual athletes, female team athletes vs. female individual athletes, male team athletes vs. female team athletes, or male individual athletes vs. female individual athletes.

The merging of physical education with the theories of applied psychology create new avenues of research. Sport psychology may provide a basis upon which a coach can make decisions which will enable an athlete to more readily achieve her/his potential.

APPROVED BY RESEARCH COMMITTEE, MARCH 1988

Ruth J. Nearing

APPLIED PSYCHOLOGY

THE IMPORTANCE AND ADEQUACY OF COUNSELING SERVICES AS PERCEIVED BY GIFTED STUDENTS AND THEIR COUNSELORS

Charlotte A. Berg

The purpose of the study was to investigate the importance and adequacy of counseling services, as perceived by gifted high school students and their counselors. A questionnaire was developed to measure 20 counseling services. The sample consisted of 183 gifted students and their counselors from seven Minnesota high schools.

Mean scores on two rating scales of importance and adequacy of counseling services indicate that counselors perceive most of the services as more important than do gifted students. Counselors and students alike rate services dealing with choosing high school courses and helping with plans for post-secondary school as both important and adequate. Students rate services in the affective domain as less important and less adequate than the academic ones. Counselors rate such services as important, but inadequately provided.

Among the recommendations for further research is a need for studying not only the needs and characteristics of gifted students, but research in terms of interventions and outcome measures. Training experiences dealing with gifted students also need to be provided for counselors.

APPROVED BY RESEARCH COMMITTEE, NOVEMBER 1986

Terrance Peterson, Chairperson

THE EFFECTS OF SELF-MONITORING TO INCREASE PRODUCTION RATES IN MILDLY RETARDED ADULTS

Monica McSherry Beumer

A frequently heard complaint from employers is that individuals with mental retardation cannot work independently over sustained periods of time. To assist individuals work to yield greater productivity and maintain these increased production tasks, self-monitoring procedures have been utilized with this population. Results of research indicate that self-monitoring is effective at increasing the desired behavior but maintenance of this behavior is questionable at times.

Five subjects with low productivity and on task behavior that worked at a developmental achievement center were trained to self-monitor while working on a paid assembling job. A multiple baseline across two groups design was utilized. Individuals in the morning group had progressed into the third treatment phase while individuals in the second group had progressed into the first treatment phase.

The results of this study indicates that the self-monitoring procedures utilized appeared to be effective in increasing production rates and on task behavior. Since the study was interrupted before completion, it is impossible to assess whether these increased production rates would have maintained when the self-monitoring procedures would have been systematically faded. Further research suggestions were then discussed.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1988

Eric Rudrud, Chairperson

A DESCRIPTIVE STUDY OF WRIGHT COUNTY HUMAN SERVICES EMERGENCY SHELTER PROGRAM FOR YOUTH

David L. Bissonnette

This study describes the emergency shelter program for children 12 to 18 years of age, under the supervision of the Child Protection Unit at Wright County Human Services, Buffalo, Minnesota. The initial need for Wright County to develop the program as well as the program's conception provided by grant money through the Crime Control Planning Board is outlined. Intake and discharge information on youths entering shelter over a five-year period is presented. A survey of 25 Minnesota counties indicate that Wright County's emergency shelter program is unique in that it provides psychological assessments and diagnostic services that other county-based programs do not provide.

APPROVED BY RESEARCH COMMITTEE, FEBRUARY 1989

Mary Dwyer, Chairperson

BEHAVIORAL WEIGHT LOSS PROGRAMMING FOR OBESE INDIVIDUALS WITH MENTAL RETARDATION USING GROUP-CONTINGENT REINFORCEMENT

Jennifer Harley Chalmers

This study examined the effects of a weight loss program for adult females with mental retardation. This program involved weekly group meetings with eight obese females that incorporated group contingent reinforcement for: 1) attendance of the meetings; 2) self-monitoring of snacking, exercise, and weight recording behaviors; 3) weight loss; 4) positive comments to the team partner during the week; and 5) eating low-calorie meals (1000 to 1200 calories per day). A multiple baseline between treatment groups was used as the research design. The results revealed a statistically

significant difference for weight change per week between the treatment and nontreatment phases. However, skinfold thickness change per week did not reveal a significant difference. Recommendations for modifications of this weight loss program are made.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1988

Gloria Gasparotto, Chairperson

A SHOPPING SKILLS CURRICULUM FOR SEVERELY HANDICAPPED LEARNERS

Sheila S. Giere

The purpose of this study was to develop and test the effectiveness of a prosthetic photographic aid in training non-reading adults with severe handicaps to generate a shopping list functionally related to meal preparation, select items on a budget, and pay for them in community grocery stores. The subjects were three residents of a community-based residential program serving developmentally disabled adults. Behavior change was assessed through a multiple baseline design across subjects over two response categories. The two response categories were 1) generating a shopping list, checking to see which items for a pictorial recipe were already in the house, and using the budget gauge; and 2) selecting grocery items in the store and making financial transactions at the checkout counter. All training occurred in the natural environment (i.e., the learner's kitchen and a local grocery store).

Results indicate that two of the three learners reached criterion performance on the third training session, their performance was maintained over one- and three-week follow-up sessions, and generalization occurred to untrained items. Subject one's performance was more variable, requiring more training sessions, and he did not meet the criteria of three consecutive trials performed without assistance in generating a shopping list. Subject one was able to perform all the steps in both response categories, for the most part without assistance, but requiring verbal reminders to carry out some of the steps.

The results indicate that non-reading individuals were able to successfully purchase meal items in a grocery store utilizing the procedures developed. The results obtained are discussed regarding the efficacy of this approach with non-reading, severely handicapped individuals and in terms of partial participation.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1986

Eric Rudrud, Chairperson

EDUCATION ABOUT WOMEN IN GRADUATE COUNSELING PROGRAMS

Gerianne Klug

Previous research shows that counselors have used biased theories and research about women and have displayed biased values, attitudes and judgements towards women in counseling. Other research shows that training counselors about nonsexist counseling and women's issues has decreased counselors' bias when counseling women.

The present study surveyed all graduate counseling programs at the masters and doctoral levels accredited by the Council for Accreditation of Counseling and Related Educational Programs (C.A.C.R.E.P.). This survey was sent to all chairpersons at 51 universities having 140 programs.

The survey found that only eight percent of responding programs required courses and only 35 percent offered elective courses specifically about women's issues and concerns in counseling. This suggests that the majority of the graduate programs lack courses specifically about women and need to implement them so that counselors will be trained to counsel women adequately and without bias.

It was also found that more male faculty were tenured than female faculty, which suggests that students have fewer female role models in higher positions which may affect their view of women as equals.

APPROVED BY RESEARCH COMMITTEE, MAY 1989

Jana Preble, Chairperson

INCREASING APPROPRIATE STAFF INTERACTIONS WITH SEVERELY AND PROFOUNDLY RETARDED RESIDENTS USING A VIDEO TAPE MODEL AND PERFORMANCE FEEDBACK

Daniel G. Larson

The purpose of this study was to evaluate the effectiveness of a training package, i.e., using a video tape model and performance feedback to increase appropriate staff interactions with individuals who have mental retardation. The subjects in this study are four direct care staff who are responsible for the care and training of 16 persons with mental retardation. Three female staff and one male staff participated in this study. The design of this study was a multiple baseline design across behaviors. During baseline the experimenter observed the subjects and recorded data on three dependent variables, i.e., prompting, praising, and signing and other staff behaviors using a time sampling procedure.

During intervention I, the subjects received in-service training using a video tape model of the experimenter using appropriate prompting skills. In addition, the subjects received performance feedback on the percent of intervals in which they were observed prompting residents to engage in daily routine activities during observation sessions. During intervention II, the video tape model and performance feedback was used to increase the subject's praising behavior when interacting with residents. During intervention III, the video tape model and performance feedback was used to increase the subject's signing behavior when interacting with residents.

The results of this study indicated that all subjects increased their staff-resident interactions in regard to prompting, praising and signing. In addition to evaluating the effect of an in-service training package on staff behavior--three to four residents were chosen randomly during observation sessions to evaluate what effect staff training has on resident outcome. Resident outcome included the following behaviors: active treatment, inappropriate behavior and neutral behavior. All residents were observed on a random schedule. The results indicated that during baseline residents received active treatment during 26% of the observations. Across treatment interventions, the residents were observed to be receiving active treatment during 56% of the observations. Generalization of treatment effect was reviewed and evaluated.

APPROVED BY RESEARCH COMMITTEE, MAY 1991

Eric Rudrud, Chairperson

DEPRESSION IN COLLEGE WOMEN: CORRELATIONS BETWEEN PERSONAL ATTRIBUTES AND EXTRA-CURRICULAR ACTIVITIES

Judith M. Meyer

One hundred and twelve college women from St. Cloud State University at the junior and senior level were administered a set of three inventories measuring the following: depression, personal attributes and extra-curricular involvement. All subjects were single, Caucasian and between the ages of 20-29, a relatively homogeneous sample.

The three inventories used were the Multiscore Depression Inventory (MDI), the Personal Attributes Questionnaire (PAQ), and the Extra-Curricular Involvement Inventory (ECII). A correlational matrix of Pearson Product-Moment Correlations was constructed.

Hypotheses included the following: a significant positive correlation can be found between levels of depression and femininity scores; a significant negative correlation can be found between levels of activity and levels of depression; and a significant negative correlation can be found between levels of femininity and levels of activity. Results were unresponsive.

APPROVED BY RESEARCH COMMITTEE, NOVEMBER 1986

George Petrangelo, Chairperson

THE EFFECTS OF A SELF-MONITORING PROCEDURE WITH PICTURE CUES ON JOB INDEPENDENCE AND EFFICIENCY WITH MENTALLY RETARDED EMPLOYEES

Julie L. Morris

The present study investigated the effects of a self-monitoring procedure using sequentially ordered pictorial task analyses on the percentage of prompts required for correct task completion and task completion time in four mentally retarded adults. Percentage of prompts given was defined as the percentage of steps, over all tasks in a sequence, which required trainer prompting to correctly complete. Task completion time was defined as the amount of time, in minutes, required to complete all tasks within a sequence. In addition to investigating the treatment effects, a generalization measure was collected on two subjects to determine whether the picture-cue/self-monitoring procedure could be used effectively across similar settings.

Upon implementation of the picture-cue/self-monitoring procedure all four subjects immediately decreased in the need for trainer prompting. Task completion time decreased for all subjects by the end of the study. The generalization measure yielded results that indicated that the picture-cue/self-monitoring procedure used in this study could be used effectively in other settings similar to the originally trained setting. Self-monitoring using picture-cues was shown to be an effective procedure for promoting greater independence and efficiency in mentally retarded adults in a vocational setting.

APPROVED BY RESEARCH COMMITTEE, NOVEMBER 1990

Gloria Gasparotto, Chairperson

THE EFFECTS OF THE SYSTEMATIC FADING OF THE OPPORTUNITY TO SELF-MONITOR ON PRODUCTION RATES IN A VOCATIONAL HABILITATION SETTING

William Karl Noot

Within the training procedures used to train severely handicapped individuals vocational skills, the maintenance of skills trained has often not occurred, resulting in those workers losing their jobs. Some authors have investigated the use of self-monitoring to promote behavior change and maintenance. However, even though behavior change often occurs, there is no maintenance of that behavior change after the removal of self-monitoring. These results suggest that an additional component must be added to self-monitoring to promote response maintenance. Other authors have suggested that the fading of self-monitoring could promote response maintenance.

Clients enrolled in a vocational training program in a midwestern regional human services center were trained to self-monitor while completing a packaging task. A multiple baseline across two groups design was utilized. Individuals in the morning sessions self-monitored without fading the self-monitoring, while individuals in the afternoon sessions self-monitored and then gradually faded the amount of self-monitoring completed.

The results of this investigation indicate that the self-monitoring procedure implemented was unsuccessful in increasing the productivity of these severely handicapped workers. In addition, the systematic fading of self-monitoring was also unsuccessful in promoting response maintenance. Implications for further research were then discussed.

APPROVED BY RESEARCH COMMITTEE, MAY 1987
Eric Rudrud, Chairperson

IMPROVED COLLEGIATE CURVEBALL HITTING THROUGH THE ENHANCEMENT OF VISUAL CUES

Kurt Osborne

The purpose of this study was to determine the effectiveness of additional visual cues to the seams of baseballs to aid in the success of hitting curveballs. The subjects were five undergraduate candidates for the St. Cloud State University varsity baseball team. Behavior change was assessed through an alternating treatments design involving a control measure of regular baseballs and two treatment conditions that included baseballs with one-fourth inch and one-eighth inch orange stripes marked on each side of, and including, the seams of the baseballs. All training occurred in an indoor batting cage, and all pitches were thrown by a Curvemaster pitching machine.

Results show that in the one-fourth inch condition all five subjects hit the marked balls at a higher rate than the unmarked balls. The mean percent of improvement in the one-fourth inch condition was 10.21%, with a range of 2.00%-19.04%.

Subjects four and five were able to participate during the one-eighth inch training condition. However, subjects one, two, and three were injured in practice and did not participate. Subject four had a 17.12% better hitting ratio of the one-eighth inch marked balls to unmarked balls, and subject five was 10.56% more successful in hitting the marked balls than the unmarked.

The results indicate a differential effect between marked and unmarked balls. The experiment did not, however, fully accomplish its goal of entirely fading the visual cues of the marked balls. The differential rate of hitting marked vs. unmarked balls suggests that the addition of visual cues may be a significant and beneficial technique to enhance hitting performance. Further research regarding the fading of cues and replication of procedures with additional subjects is warranted.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1987
Eric Rudrud, Chairperson

INCREASING INDEPENDENCE IN SELF-CARE SKILLS OF PEOPLE WITH MULTIPLE DISABILITIES USING A WHOLE TASK METHOD OF PRESENTATION

Janice L. Ostrom

The physical limitations of people with multiple disabilities challenge us beyond the opportunities that have been offered to people with mental retardation. Environmental adaptations may be necessary to assist people with multiple disabilities to assume greater independence in various domestic and self-care tasks.

The purpose of this study was to use a whole task method of presentation for increasing the level of independence of three subjects with multiple disabilities in the task of hair drying. A nine step task analysis included the use of microswitches to assist the subjects in the activation of the appliance. A prescriptive prompt sequence was used to prompt the completion of each step of the task if the step was not independently completed by the subject.

Results of the study demonstrate an increase in the level of independence for all subjects. Celeration lines to enhance the visual analysis of the data clearly indicate a positive change from baseline measures for each subject. These results were discussed in terms of the behavior chain established through a whole method of presentation.

APPROVED BY RESEARCH COMMITTEE, MAY 1991

Gloria Gasparotto, Chairperson

THE EFFECTS OF PEER TUTORING ON THE CONVERSATION SKILLS OF ADULTS WITH MENTAL RETARDATION

Blake W. Peterson

Studies have indicated that a deficit in an individual's communication skills may effect their performance in the home, vocational, and school environments. Communication disorders are particularly prevalent among people with mental retardation. A variety of operant techniques have been shown to increase communication skill levels with this population. The present study utilized a peer tutoring procedure in order to train conversational initiations and expansions to four adults with mental retardation. During tutor-initiated conversations, only one subject showed improvement in appropriate expansions, as the other three subjects showed high levels of appropriateness during baseline. During subject-initiated conversations, all subjects showed increases in appropriate initiations, while three of the four subjects showed increases in appropriate expansions. Several possibilities were discussed that may explain the differential effects of the treatment procedure.

APPROVED BY RESEARCH COMMITTEE, JUNE 1991

Eric Rudrud, Chairperson

COMPARISON OF CONSEQUENCE LOCUS IN DECREASING A SELF-INJURIOUS BEHAVIOR IN A PERSON WITH MENTAL RETARDATION

Dennis C. Reiland

This experiment compares pre-response consequence of a self-injurious behavior to post-response consequence using a 10-sec arm lift consequence. The research compared the two consequence times in an alternating treatments design using a person with profound mental retardation. The dependent variable was the time between self-injurious responses. Although head hitting inter-response times decreased during the sessions, pre-response consequence was more effective than post-response consequence. Pre-response punishment prevented injury from occurring thus adding to its social validity. Additional research is needed to determine the characteristics of pre-response consequence.

APPROVED BY RESEARCH COMMITTEE, MAY 1987

Dennis L. Nunes, Chairperson

WOMEN AND DEPRESSION: A COMPARISON OF CONFIDANT RELATIONSHIPS

Janice Kay Johnson Rein

Questionnaires containing a request for information about age, confidant and sexual relationships and asking respondents to complete the Beck Depression Inventory were sent to 394 women, ages 25-55, currently enrolled at a midwestern university. The 265 respondents reported having either no confidant or the number of confidants they each had. They also reported whether or not they had a sexual relationship with any of the confidants. Statistical findings, using two-factor ANOVA, showed no significant differences, at the .05 level, in levels of depression for women who did and did not have a sexual relationship with a confidant. Results of t-tests indicated at the .05 level of significance women with four or six confidants tend to be less depressed than those with less confidants.

APPROVED BY RESEARCH COMMITTEE, MAY 1987

John Hotz, Chairperson

RING-NECK DOVES' PERFORMANCE ON THE AMBIGUOUS-CUE PROBLEM: THE EFFECTS OF INCREASED "OBSERVING BEHAVIOR"

Robert G. Riedel II

Two experimental manipulations were used to test the "observing response" theory of ambiguous-cue performance. The ambiguous-cue problem contains three stimuli P (positive), N (negative), and A (ambiguous). These stimuli are presented in two trial types, each having two choice stimuli (PA and NA). On PA trials P is the correct choice and on NA trials A is the correct choice. Typically NA performance is greater than PA performance with stereometric stimuli. It was proposed that by improving the subjects ability to observe the stimuli, performance during PA trial types would improve. A reversal design was used to evaluate and test the proposed hypothesis. Results indicated that three of the eight subjects showed minimal improvement while the other subjects' performances showed no differences across phases. It appeared that little, if any, observing response took place; and that other methods may be required in order for the observing response to occur or to be measured.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1990

Anthony Marcattilio, Chairperson

HUMOR AWARENESS: AN INVESTIGATION OF HUMOR AWARENESS LEVELS AMONG JOBS AND TRAINING PERSONNEL IN STEARNS COUNTY MINNESOTA

Michael John Schroeder

Sixty subjects were randomly selected from a county wide population of Jobs and Training personnel that were employed full-time during fiscal year 1989. Subjects were requested to complete a "Health" questionnaire which consisted of fourteen hidden questions assessing subjects for humor awareness. It was believed that after determining humor awareness levels there would be a correlational significance between score outcomes with age, gender and job status. Although there was a 100% return rate, no statistical relationship significance was indicated except for high scores as

correlated with job status which yielded a low significance level. The appropriateness of the questionnaire design of the sampled population could have been a contributing factor to no correlational significance.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1989

Jana Preble, Chairperson

STUDY COMPARING A COMPUTER-BASED INSTRUMENT TO CLINICAL JUDGEMENT OF COUNSELORS IN ASSESSING CHEMICAL HEALTH OF AN ADOLESCENT POPULATION

Jeanne Witter

This study investigates a computer-based assessment instrument developed for use with an adult population for its applicability with adolescents. The agency providing the assessments was independent of any treatment delivery system. Most of the adolescent subjects had not received prior treatment for alcohol or other drug problems, and most had no history of arrest or legal intervention relating to chemical use.

The first 15 of the 30 adolescent subjects first received a standard face-to-face interview followed by the computer-based assessment interview; the order was reversed for the second 15. The face-to-face interviews were observed by an independent counselor. Three sets of ratings were generated by this process: one each for the counselor conducting the interview, the observer and the computer-based assessment. The purpose of the observer's rating was to establish an external criterion measure by which to compare the results of the computer-based assessment interview.

The results indicate that on the most germane items measured, the Minnesota Assessment of Chemical Health (MACH) agreed with the interviewer within seven percentage points of the rate at which the observer agreed with the interviewer. The MACH rendered diagnoses which were as valid as an independent observer's diagnoses. And the MACH provides a wide range of easily obtainable, standardized information.

APPROVED BY RESEARCH COMMITTEE, MARCH 1989

John C. Hotz, Chairperson

INCREASING ACTIVITY ATTENDANCE AND EXERCISE LEVELS WITH INSTITUTIONALIZED PSYCHIATRIC AND GERIATRIC PATIENTS THROUGH THE USE OF POSITIVE REINFORCEMENT AND SELF-MONITORING TECHNIQUES

Ann Zaiser

Increased activity, such as exercise, may have a positive effect on health (Folkins, 1976; Geist, Klein, Eischens, Faris, Gurman & Morgan, 1978; Hartz, Wallace & Cayton, 1982; Nowlis & Greenberg, 1979; Simpson, 1986; Tomporowski & Ellis, 1984). The purpose of this study was to demonstrate that positive reinforcement and self-monitoring techniques can increase exercise levels and group activity attendance of five institutionalized psychiatric and geriatric patients (three female and two male). An exercise group was established and the participants received fruit drink during that time. Successive approximations toward predetermined individualized exercise goals were positively reinforced with cereal bars, raisins and dried fruit for meeting daily criteria. This study included three exercises: neck rolls, arm circles and leg lifters. The results of this study indicate that positive reinforcement and self-monitoring techniques did increase activity attendance and exercise activity levels with these subjects.

APPROVED BY RESEARCH COMMITTEE, NOVEMBER 1986

Marilyn Jensen, Chairperson

READING CONSULTANT

THE EFFECT OF MULTISENSORY READING PROGRAMS ON STANDARDIZED READING TEST SCORES

Lorin Ellertson

All students do not learn to read, or progress to higher levels of reading by the same methods and materials. To deal with this problem, reading specialists have used a variety of different methods and materials. The multisensory approach uses more than one sense simultaneously to teach reading. This method can be traced back to Dr. Grace Fernald who developed the "Fernald Method" of "VAKT" (Visual, Auditory, Kinesthetic, Tactile) in the 1920's. There are many variations and expansions of this basic method. With the advent of technology, many schools have learning labs that are equipped with special audio-visual machines and programs that bombard the student with simultaneous multisensory stimulation.

Three types of multisensory reading programs are being used at the Alternative Education Center in Brainerd, Minnesota. The purpose of this study was to determine if the use of these multisensory reading programs have had any effect on the standardized reading test scores of the students who participated in these programs. In September and October of 1985, students were given the Reading Vocabulary and Reading Comprehension sections of the Stanford Test of Academic Skills (TASK), Level 2, Form E. In March, these students were retested with Form F of the TASK. Six students who received instruction on one of the multisensory reading programs during this period composed the experimental group. The control group was composed of six students who did not receive instruction on any of these programs. To determine a significant statistical difference between the two groups, each student's gain or decline from fall to spring in both vocabulary and comprehension was computed. The mean gain of the experimental group was compared to the mean of the control group for both vocabulary and comprehension. The t-test of significant difference was used to determine statistical significance. In both vocabulary and comprehension the value of t was not significant so the null hypothesis could not be rejected. It was concluded that students who received multisensory reading instruction did not show more significant gain on the Reading Vocabulary or Reading Comprehension sections of the TASK than those students who did not receive multisensory reading instruction. Although not statistically significant, it was speculated that the multisensory reading programs helped those students who participated in them to show actual gains on their reading scores and motivated them to stay in school for the entire year.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1986

Roger Rouch, Chairperson

THE EFFECTS OF GROUPING FOR READING INSTRUCTION ON SELF-ESTEEM

Patricia J. Held

PROBLEM: This study examined the effects homogeneous ability grouping for reading instruction has on the self-esteem of low and high ability readers in first grade.

PROCEDURE: A multiple-baseline design across settings was used to test the following hypotheses: 1) when switching from homogeneous ability grouping to a heterogeneous whole group, self-esteem will go up for low ability students, and 2) self-esteem will remain relatively constant for high ability students given the same circumstances. Daily teacher ratings of self-esteem were taken using the Self-Esteem Rating Scale for Children (SERSC) throughout baseline and intervention phases for four subgroups (five low and five high ability subjects in each of two first grade settings). The baseline phase consisted of instructing the students in homogeneous ability groups. In the intervention phase, the students were

instructed as a heterogeneous whole group. Average self-esteem scores for individuals and subgroups were calculated, compared, and graphed for analysis.

RESULTS: The low ability subjects in setting one showed a group average increase of 16.05 points over the study. The low ability subjects in setting two showed a group average increase of 2.30 points. The high ability subjects in setting one showed a group average increase of 1.35 points, while the high ability subjects in setting two showed an increase of 2.28 points.

CONCLUSIONS: Hypothesis one held for the low ability subjects in both settings. These results were not, however, strongly reinforced by the low ability subjects in setting two. Hypothesis two held for both high ability groups. It is the recommendation of this researcher that further study be done, and heterogeneous whole group instruction continue in both first grade settings.

APPROVED BY RESEARCH COMMITTEE, MAY 1990

Roger Rouch, Chairperson

WRITING: ITS INFLUENCE ON READING COMPREHENSION

Julie Ann Albee Lusti

Pre and post scores from a Test of Reading Comprehension (TORC) were obtained from forty-three fifth graders and forty-three sixth graders to test the hypothesis: that students who participate in a writing program in conjunction with their reading series will increase their reading comprehension more than students who do not participate.

PROCEDURE: Fifth and sixth graders were included in the experimental group and the control group. The experimental group used the Thea Holtan Writing Program; the control group did not. Both groups used the Houghton Mifflin Reading Series.

The statistical procedure used was an analysis of mean gain scores. The means of the pretest and posttest scores of the TORC were studied to determine if a writing program used with a basal series resulted in an increased reading comprehension score.

FINDINGS: No statistically significant differences in gain scores were found. The data showed that on every subtest, the mean test score was higher for the experimental group than the control group with one exception. Also, when comparing the mean gain of the experimental group to the mean gain of the control group, the experimental group showed higher gains than the control group.

In comparing the mean gain by sex, the girls showed a higher mean gain than the boys on each subtest. Upon further examination of the t-values by sex, there was a sex by grade effect which was significant. This was found to be the fifth grade girls' general vocabulary and syntactic similarities score. No interpretation is offered to explain this discovery.

CONCLUSIONS: This study provided no conclusive evidence that the writing program caused an increase in reading comprehension as measured by the TORC for the duration of this study.

APPROVED BY RESEARCH COMMITTEE, NOVEMBER 1986

Roger Rouch, Chairperson

A COMPARATIVE STUDY FOR TWO METHODS OF TEACHING SPELLING IN SECOND GRADE

Deborah A. Malley

This study compared the "Spelling Mastery" textbook series by Science Research Associates (SRA) and the "Spelling" textbook by Houghton Mifflin. Subjects were three elementary classrooms selected from an available population pool. These subjects were second graders in Alexandria, Minnesota. The SRA program employed a direct instruction approach, whereas the Houghton Mifflin series was a traditional spelling text.

FINDINGS: Results showed that there was no statistically significant difference in achievement between the groups.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1987

Roger Rouch, Chairperson

READING RATE: A STUDY USING A DRILL AND PRACTICE COMPUTER PROGRAM

Renee C. Mooney

PROBLEM: This study attempted to determine if a drill and practice computer program could improve both reading rate and comprehension and whether the reading rate and comprehension was retained with or without practice.

PROCEDURE: Fifty-two high school students used the Speed Reader II drill and practice computer program twice a week for five weeks. A baseline score for reading rate and comprehension was gathered at the beginning of the five weeks, and a midpoint score for reading rate and comprehension was gathered at the end of the five weeks. Then, the students were divided equally into two groups. Group A received no skill maintenance for the next five weeks and Group B received a skill maintenance of one practice session per week for the next five weeks. At the end of the second five weeks an end point score for reading rate and comprehension was gathered for both Groups A and B.

An analysis of mean gain was used to determine whether there were any statistically significant gains in reading rate and comprehension.

CONCLUSION: This study provided no conclusive evidence that the drill and practice computer program caused an improvement in both reading rate and comprehension.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1988

Roger Rouch, Chairperson

A COMPARISON AMONG BASAL, LITERATURE-ENHANCED, AND LITERATURE-CONCENTRATED READING IN BUFFALO INTERMEDIATE SCHOOL

Martha Lea Derus Olson

The purpose of this study was to determine whether the type of instruction fourth grade students received in reading affected their learning or attitude toward reading.

PROBLEM: Will fourth grade students who have received reading instruction under a basal, literature-enhanced, or literature-concentrated program demonstrate differences in reading vocabulary and comprehension and attitude toward reading as measured by the Nelson Reading Skills Test and an attitude survey?

Hypothesis I. There are significant differences in vocabulary and comprehension posttest mean scores between subjects given instruction in basal versus literature-enhanced or literature-concentrated reading.

Hypothesis II. There are higher levels of interest by the literature-enhanced or literature-concentrated groups in independent reading versus the basal group as shown by an attitude survey.

PROCEDURE: Subjects for this study were six classes of academically heterogeneous fourth graders in the Buffalo Intermediate School. Two classes were taught for one semester with the basal method, two were taught by a literature-enhanced method, and two were instructed using a literature-based method. The teachers were interviewed to verify their method of teaching reading.

Students were pretested in September with the Nelson Reading Test and the Student Activity Preference Survey to determine if there were any significant baseline differences among the classes. There were none. They were posttested in January. The t tests were computed between pairs of posttest scores on vocabulary, comprehension, and interest measures.

FINDINGS: On the basis of statistical findings on vocabulary and comprehension, factors involving the teachers in the study, and the length of the study, Hypothesis I was rejected. On the basis of statistical findings on interest measures, Hypothesis II was accepted.

CONCLUSIONS: Although they were not conclusive, the results of this study indicate that a brief exposure of fourth grade students to literature-enhancement and literature-concentrated reading may affect their vocabulary. No significant differences were found in comprehension. Those students in the literature-concentrated classes did show significantly higher interest in choosing reading versus doing other activities.

The study could possibly be more effective if the teachers were not working on study grants which involved the reading programs, and if presented without the strict time limits imposed by this design.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1990

Roger Rouch, Chairperson

CORRELATION STUDY BETWEEN BEHAVIOR AND READING AMONG ADOLESCENT STUDENTS REFERRED TO AN ALTERNATIVE SCHOOL PROGRAM

Theresa A. Welle

PROBLEM: This study was undertaken in large part due to the number of students referred to the Area Learning Center who had difficulty with comprehension, vocabulary and related reading skill deficits and who also display observable/measurable emotional/behavioral disorders. Total reading comprehension and vocabulary scores were correlated with behavioral descriptors to determine if a relationship exists.

PROCEDURE: Student cumulative files of 38 seventh, eighth, ninth and tenth graders referred to the Area Learning Center were examined. The Comprehensive Test of Basic Skills (CTBS) was utilized as the academic gathering instrument. Total reading comprehension and vocabulary scores were obtained. The ACTERS scale was utilized as the behavioral data gathering instrument. Behavioral descriptors included: attention, hyperactivity, social skills and oppositional. Total comprehension and vocabulary reading scores and behavioral descriptor raw scores were correlated using the Pearson Product Moment Correlation. The probability level for acceptance or rejection of the null hypothesis was set at .05.

RESULTS: Of the comprehension and vocabulary reading score totals correlated with the four behavioral descriptors, five were significant. Attention correlated with vocabulary ($r = .314$) and comprehension ($r = .315$). Social skills correlated with vocabulary ($r = .336$) and oppositional behavior correlated with vocabulary ($r = .390$) and comprehension ($r = .368$).

Of the personal characteristics and measures of behavior two were significant. Grade correlated with hyperactivity ($r = .416$) and oppositional ($r = .404$) behavioral descriptors. All other variables showed no statistical significance.

APPROVED BY RESEARCH COMMITTEE, MAY 1991
Roger Rouch, Chairperson

SPECIAL EDUCATION

TEACHER ATTITUDES TOWARDS TEACHER ASSISTANCE TEAMS

Linda L. Ayers

This study was designed to measure teacher attitudes toward teacher assistance teams. A survey with 22 items related to teacher attitudes toward managing behavior and instructional problems in the mainstream setting was developed. Seventeen of these items were thematically related to variables identified by Chalfant and Pysh (1985) as reflecting positive attitudes toward teacher assistance teams. Four professional special educators judged this relationship. The questionnaire also contained five items that were direct paraphrases of Chalfant's and Pysh's variables.

All of the mainstream teachers in K-12 in the Monticello Public Schools were surveyed (100% response rate in three schools and 60% response rate from a fourth school).

Analysis of the data found positive attitudes toward teacher assistance teams for all but one of the items for both elementary and secondary teachers. A positive rating was indicated when 50% or more of the respondents gave positive ratings. Except for the one item, positive responses ranged from a low of 51% to 100% with a mean of 77%.

In general, the elementary teachers were more positive than secondary teachers (positive response 82% for elementary teachers and 72% for secondary teachers). This was consistent for all but two of the items. These two were essentially ties between elementary and secondary. The results of this study support the conclusion that the faculties of both secondary and elementary schools studied would be receptive to the implementation of a teacher assistance team program.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1987
Jerry Wellik, Chairperson

LEARNING DISABLED STUDENTS: JOB APPLICATIONS AND FOLLOW-UP QUESTIONNAIRES

Peggy Ann Beck

PROBLEM: The purpose of this study was to examine the differences between non-learning disabled and learning disabled individuals' responses to job applications, cover letters and follow-up questionnaires. Both groups were attending work study programs at St. Cloud Technical High School, St. Cloud, Minnesota. Examinations were made on measurements of an "easy" application form, a "hard" application form, correct responses received on a follow-up questionnaire, a word recognition test of vocational vocabulary, a comprehension test of the same vocabulary words, and a measurement of total academic ability.

PROCEDURE: The sample for this study consisted of twelve non-learning disabled students and seven learning disabled students from the work study programs at St. Cloud Technical High School during 1988 and 1989. While attending St. Cloud Technical, all of the learning disabled students participated in the learning disabilities resource program. The measurement instruments were developed by the author to gather information in six different areas.

RESULTS AND CONCLUSIONS: The results of the study found significant differences between the two groups' responses in accuracy to the job application forms and the follow-up questionnaire. When the effect of ability was removed, a significant difference between the two groups existed on only the more difficult of the two job application forms. It was concluded that perhaps the responses of the learning disabled population to these instruments would not be sufficiently reliable to use as a basis for consideration of employment or for suggesting program changes. Recommendations were made regarding the use of follow-up data, questionnaire procedures, and involvement of work study programs.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1989
Floyd Ayers, Chairperson

THE EFFECTS OF EARLY EAR PATHOLOGY ON SCHOOL ACHIEVEMENT

Robert Louis Bezdicek

The problem investigated in this study was the effect of early ear pathology on school achievement. Early ear pathology was defined in this study as a positive history of ear infections as reported on the child's school health record. School achievement was defined as grades received in the seventh and eighth grades and scores from the Science Research Associates Test, Cognitive Abilities Test, and the Differential Aptitude Test. This study utilized a matched-pair design. The experimental group consisted of 31 ninth grade students (16 boys and 15 girls) who had a positive history of early ear pathology. The control group consisted of 31 ninth grade students who did not have early ear pathology. The control subjects matched the experimental subjects on the variables of sex, grade in school, year tests were taken, and occupation of the breadwinner. The subtest scores of the three standardized tests and the seventh and eighth grade rank were obtained for both the experimental and control groups. A two tail t-test was used to analyze group mean differences while Pearson's Product Moment Correlation Coefficient was used to analyze any correlation between the groups tested.

No significant statistical differences between the means were reported except on the Clerical Speed and Accuracy subtest of the Differential Aptitude Test. On this measure the experimental group mean was significantly higher than the control group mean. The results of this study reveal that early ear pathology does not have an effect on school achievement.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1987
Joan Bigler, Chairperson

CORRECTIVE READING AND ITS EFFECT ON GRADE POINT AVERAGE IN THE SECONDARY SCHOOL

Patricia J. Biermann

This study was concerned with identifying instructional strategies which could be used in programming for the educational needs of the mildly handicapped adolescent. The purpose of the study was to determine if (a) grade point averages when compared were significantly different between the Corrective Reading group and the alternative reading group, (b) the treatment was more successful the longer students were in the Corrective Reading Program, and (c) did

students instructed in the Corrective Reading Program show more change in science and social studies grades than students who had alternative reading programs.

Forty-four mildly handicapped adolescents in grades seven through twelve were included in the study. In the Corrective Reading group, twenty-two students received nine to eighteen months of instruction and were then compared to twenty-two students who were being taught alternative reading programs. Classroom grades were the indicators used for determining success in individual courses and grade point averages were also computed to determine generalization of the Corrective Reading treatment to mainstream settings.

The results of the study indicate that the grade point averages of students who had Corrective Reading were not significantly different than the grade point averages of students who had alternative reading programs. However, within the Corrective Reading group there was a tendency for the grade point averages of students to improve as a result of more time spent in the program. The mean scores for the Corrective Reading group were higher in both science and social studies than the alternative reading group.

The study concluded that Corrective Reading might result in greater success in the mainstream curriculum for students receiving nine to eighteen months of instruction.

APPROVED BY RESEARCH COMMITTEE, NOVEMBER 1986

Joan Bigler, Chairperson

GENERALIZATION OF SOCIAL SKILLS ACROSS SETTINGS

Donna M. Bjorklund

The purpose of this study was to examine generalization and its role in the social skills training of the handicapped population.

Researchers seem in basic agreement that social skills training for the handicapped is beneficial. An important key to successful training seems to be the incorporating of generalization into any program used. To facilitate generalization, research indicates the importance of the trained behaviors being encouraged and reinforced in the natural environment.

This study consisted to two high school senior, male subjects. Using an ABC design with the two subjects across three settings, the social skill of ignoring peer distractions was targeted. The design could be symbolized as follows:

	<u>Setting I</u>	<u>Setting II</u>	<u>Setting III</u>
Subject I	ABC	ABC	AAA
Subject II	ABC	AAA (no treatment if transfer occurred; if no transfer, then treatment)	AAA

"A" consisted of baseline data being gathered, "B" was the treatment of five bonus points daily for remaining on-task for the class period of 50 minutes, and "C" was the weaning from the treatment by gradually increasing the spacing between treatments. The three settings included: a LD classroom for written language disabled youth, a mainstream social studies classroom, and a mainstream classroom for students enrolled in the work experience program.

Results showed off-task behaviors reduced in Setting III with no treatments implemented. Thus, generalization can be said to have occurred in Setting III for both subjects. For one subject, treatment in one setting did not appear enough to generalize the behavior to a second setting; however, treatment in two settings appeared enough to promote generalization in the third setting. In addition to the increasing of on-task behaviors, improvements for subjects were also

seen in producing correct schoolwork and finishing assignments within time limits. If the subjects were not distracted, their work was completed on time and completed more correctly.

In conclusion, this study appears to support the importance of generalization in the social skills training of the handicapped. Without programming for transfer to another setting, generalization did not occur; with programming across two settings, generalization occurred in this study in a third setting.

APPROVED BY RESEARCH COMMITTEE, FEBRUARY 1991

Floyd Ayers, Chairperson

RELATIONSHIP BETWEEN METHOD OF FEEDBACK AND ACADEMIC ACHIEVEMENT

Jane E. Bloomquist

Various intervention strategies have been implemented by classroom teachers to provide students with an optimal learning environment. A method which increases academic achievement, while concurrently, the student's inappropriate behavior to a minimum would be ideal. The public-posting of student quiz scores has been suggested as one such strategy which could improve both the student's academic and social-emotional behavior.

The effects of public-posting versus private scoring of the weekly math and spelling quizzes of three twelve-year-old male E/BD students were assessed. An alternating treatment design on a two-week schedule was used. In addition to the weekly quiz scores, academic data were collected daily in math and language arts. Instances of off-task behavior, both nondisruptive and disruptive, were also recorded on a daily basis.

The results did not suggest that the scores for the math or spelling quizzes were different when the quiz scores were publicly posted than when privately scored. The overall improvement in daily academic production did not seem to have been a direct consequence of either the public or private condition. The program appeared to have a positive influence towards reducing instances of noncompliance; the students' off-task behavior, disruptive and nondisruptive, improved during both the public and private conditions. Alternative explanations for changes in the students' academic and off-task behavior were discussed.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1987

Sandra Reese, Chairperson

AN E/BD LICENSURE PROJECT FOR SPECIAL EDUCATION TEACHERS IN RURAL AREAS

Bonita Bray Carlson

One of the most underserved groups of handicapped students in Minnesota are those who have behavioral disorders. Due to the limited production of training programs, it is difficult for all schools to recruit such teachers, but particularly so in rural areas. Turnover of such teachers in rural areas is also high. The purpose of this project was to train a group of teachers already employed in a rural area and to provide the training as close to their local districts as possible.

The target area was a group of school districts served by the Educational Cooperative Service Unit #5 in Central Minnesota. This regional unit encompassed four special education cooperatives which served a total of 28 local school districts with school enrollments ranging from one district with slightly more than 250 students to one with over 5,700. Twenty-one school districts enrolled less than 1,000 students. The mean enrollment was slightly over 1,000 students.

A project was submitted to the Minnesota Department of Education for discretionary funds from P.L. 94-142 and was approved. Roles for agencies involved were identified and evaluation data were collected.

An analysis of the evaluation data will be used to determine what impact and to what extent the project was able to utilize research and best practices regarding improved teacher recruitment and retention. Evaluation data should

generate information from the field regarding effective training practices and methods for providing services to this population.

Finally and most significantly, data should indicate whether the project and its results had any impact on services for behaviorally disordered students within Region 5.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1987

Floyd Ayers, Chairperson

THE EFFECT OF ADULT-CHILD CONFERENCES ON THE INDEPENDENT READING OF EMH AND LD CHILDREN

Nona J. Carlson

PROBLEM: The purpose of this study was to examine the effectiveness of individual contract conferences on the independent reading of EMH and LD children. Two measures of independent reading were examined: the frequency of the books read and the reading level of the books read.

PROCEDURE: The subjects in this study were eleven elementary LD and EMH children in a resource room setting. Baseline data was collected on the amount of reading done by the students for six weeks. Individual conferences were then set up with each student for the purpose of establishing an individual contract. Each student had six more conferences over the next six weeks. At these conferences the books read were discussed and changes in the contract were agreed on. The teacher encouraged reading to continue, including appropriate level of books and any rewards were given. The results were recorded on the Individual Student Reading Record Sheets and compiled by the teacher.

RESULTS: Results of this study indicated that a program designed to increase the amount of independent reading was effective with a group of children in a special education resource room. Group data showed significant changes between the pre and post measures of the amount of independent reading. The number of children who actually improved the number of books read was six out of ten, indicating that individual data would not necessarily confirm the group results. The readability level of books selected after treatment also increased.

CONCLUSION: It was concluded that both variables were significantly affected. The total number of books read and the level of difficulty increased. The changes were statistically significant as indicated by the Wilcoxon Distribution Free Signed Rank Tests, supporting the conclusion that the technique used was successful for the students in the resource room setting.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1986

Floyd Ayers, Chairperson

EFFECT OF SOCIAL SKILLS INSTRUCTION ON STUDENTS HAVING LEARNING DISABILITIES

Lorraine Dodge

The purpose of this study was to determine the effectiveness of social skills training on four second grade students having learning disabilities. Using baseline and one month after intervention assessment comparison, it was found that after a ten-week period three out of the four subjects increased their joining-in playground behavior from zero times to two or three times per week. A sociometric device and behavioral checklists were also used as pre and post measurements. Results showed increased scores, but due to the small sample size, it cannot be stated whether a significant difference

exists. It appears training in pro-social skills has a positive effect, but to what degree. This study does not have conclusive results. At the conclusion of this study, it can be stated that these students demonstrated positive actions and verbalized statements not seen nor heard about friendship-making skills prior to intervention.

APPROVED BY RESEARCH COMMITTEE, MAY 1990

Joan Bigler, Chairperson

A STUDY OF THE STUDENTS REFERRED TO AN ALTERNATIVE SCHOOL IN 1980-81

Stephen Roman Donabauer

PROBLEM: The purpose of this study was to examine the characteristics of students referred to an alternative school in 1980-81. Each characteristic was then compared to a list of graduates to determine if a relationship existed between these characteristics and the graduation percentage rate for that group of referrals.

PROCEDURE: A checklist was tabulated for each of the 260 referrals to the St. Cloud Area Learning Center, an alternative school, for the 1980-81 school year. Four characteristics were tabulated: age of referral, sex, handicapping conditions, and program placement upon referral. This information was then compared to a list of students who have graduated from the St. Cloud Area Learning Center since 1980-81. A percentage was then calculated determining the graduation rate for each characteristic group from the 1980-81 referrals. It could then be determined if any of these characteristics has a relationship with the success rate of this group of referrals as measured by graduation percentage rate.

RESULTS: Of the four characteristics for which percentages were calculated, two groups of students graduated a higher percentage rate than other students referred in 1980-81. They were the graduation rate for females and the graduation rate for students in the teen-age parent program. Females comprised 75% of the 71 graduates from the group of 260 referrals. The Teenage Parent Program graduated 45% of its students compared to the rate of 27% for the total population.

There was no distinct pattern in the graduation rate for students referred at different ages. The other characteristic, handicapping conditions, had a graduation rate of 25% compared to 27% of the total population.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1987

James Lewis, Chairperson

STRESSOR DIFFERENCES BETWEEN STUDENTS IN AN ALTERNATIVE SCHOOL AND TWO MAINSTREAM HIGH SCHOOLS

James J. Dubsky

PROBLEM: This study was concerned with stressor differences between students in an alternative high school and mainstream high school students.

PROCEDURE: Students from both populations were given the Adolescent Life Change Event Scale. A total score stated in Life Change Units was determined for each student. The total populations were examined plus sub-groups determined by sex and grade. A two-tailed t-test analysis at the .05 level of significance was employed.

RESULTS: When the total population of the students at the alternative school was compared with the total population of the mainstream students, a significant difference was found. The results showed that the students from the alternative school scored higher on the Adolescent Life Change Event Scale. When comparing the sub-groups, there was a significant difference between tenth grade males, tenth grade females, twelfth grade males and twelfth grade females. In these sub-groups, students from the alternative school scored significantly higher. For the eleventh grade males and females, even though there was a wide spread in the means in favor of students in the alternative school, there was no statistically significant difference.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1989

Steve L. Williams, Chairperson

SELF-MONITORING ON-TASK BEHAVIOR AND PRODUCTIVITY

M. Kelly Duffy

The effects of self-monitoring of on-task behavior and self-monitoring of productivity were investigated. Subjects were three third grade learning disabled children who had been identified as having Attention Deficit Hyperactivity Disorder. The subjects were initially taught the self-monitoring procedures in the Self Contained Learning Disabilities (SCLD) classroom. In the final phase, the students self-monitored their productivity in the mainstream classroom. The results showed minimal changes in attending behavior and productivity given both self-monitoring procedures in the SCLD classroom. The results in the mainstream classroom, while self-monitoring productivity, showed significant increases in productivity and mixed results for attending behavior. A high social validity was reported for self-monitoring of productivity. Participants in the study reported dissatisfaction with self-monitoring of on-task behavior.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1989

Joan Bigler, Chairperson

SPECIAL EDUCATION TEACHER REACTION TO THE IEP PROCESS

Mary J. Eaton

PROBLEM: The purpose of this study was to examine the reactions of special education teachers to the IEP process.

PROCEDURE: A questionnaire was used to determine attitudes of special education teachers to the IEP process in the Paul Bunyan Co-op. Questionnaires were completed by 86 of 105 teachers, an 82% return. The results were analyzed for significance at the .05 level by use of the chi-square technique. The Likert scale for responses was used. Comments and suggestions by the teachers were solicited at the end of the questionnaire.

RESULTS: The special education teachers indicated that they feel the intent of P.L. 94-142 is good and an IEP is essential to good teaching. However, many expressed frustration over implementation of the law. There were no significant differences in their attitudes regardless of degree held or years of teaching experience. Significant differences were found in attitudes depending upon level of instruction and number of IEPs written per year.

CONCLUSION: The majority of special education teachers in this study feel positive about the spirit of P.L. 94-142 and feel it enhances the education of exceptional children. However, many are frustrated over lack of administrative

reinforcement, time consumed in writing IEPs, and lack of involvement by regular classroom teachers and parents. They offered many suggestions on improvement of the IEP process.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1988

James Lewis, Chairperson

THE EFFECT OF INTRODUCING SEX EQUITY INTO THE CLASSROOM: CAN AN EQUITY INTERVENTION BE EFFECTIVE IN RAISING FEMALE MATH TEST SCORES?

Michelle Eckart

PROBLEM: There is considerable evidence to indicate that the sex differences found in mathematics competence may be due in part to differential treatment. This study was set up to determine if there is a direct and measurable relationship between equity in education and the productivity of students.

SAMPLE: Three girls, ages seven, eight, and ten, attending summer school for academic reasons were the subjects of this study. Subjects were white and from various socioeconomic backgrounds.

METHOD: A multiple baseline design was set up to determine what effects a combination of praise, affirmation of mathematical ability, and expectation of success would have upon subjects' daily one-minute math test scores.

RESULTS: Results of the study revealed that scores on the one-minute daily math test went up an average of six correct responses per test.

CONCLUSION: The findings of this study indicate that introducing equity into the classroom was a significant factor in raising subjects' math test scores.

REACTION: This study reaffirms the importance of teacher attitudes and expectations. Recent studies have given us voluminous data indicating inequitable treatment of girls and boys, women and men in the classroom from grade school to graduate school. Many of the barriers that women and girls now confront due to poor math competence can be eliminated if teachers can recognize and control their biases and provide a supportive, inclusive environment where equity is the rule, rather than the exception.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1988

Jerry Wellik, Chairperson

THE EFFECTS OF COOPERATIVE LEARNING PROCEDURES ON THE INDIVIDUAL'S PERCEPTION OF PEER SUPPORT, PEER ACCEPTANCE, AND SELF-WORTH

Randal Eckart

PROBLEM: The process of placing special education students into mainstream settings has left many of these students with feelings that they are not being accepted by their student peers, thus lowering their self-esteem (Johnson, 1987). This study was set up to determine if a curriculum for teaching based on cooperative learning methods would enhance the special education students' individual perception of peer support, peer acceptance, and self-worth.

SAMPLE: The study consisted of 22 eighth and ninth grade students in a junior high school setting, attending required social studies classes. The study included 17 boys and five girls. Subjects were Caucasian and from various socioeconomic backgrounds.

METHOD: A multiple baseline design was set up to determine the effects of a curriculum intervention based on cooperative learning, whereby competitive and individualistic methods had previously existed. Measurements were made by the students themselves, utilizing a questionnaire with a self-rating scale.

RESULTS: Results of this study revealed that the mean average response ratings showed a net increase over baseline for questions measuring the individuals' perceptions of self-worth, peer acceptance, and peer support.

CONCLUSION: The findings of this study indicate that the introduction of cooperative learning in a junior high school classroom setting was a significant factor in raising mainstreamed special education students' perceptions of their self-worth, of peer acceptance, and of peer support.

REACTION: This study affirms the importance of utilizing cooperative methods of teaching in the classroom as well as traditional individualistic and competitive methods that are most predominantly employed.

APPROVED BY RESEARCH COMMITTEE, FEBRUARY 1989

Jerry Wellik, Chairperson

THE EFFECTIVENESS OF THE KEYWORD LEARNING STRATEGY IN SEVENTH GRADE LIFE SCIENCE

Terri Lynn Elsey

The purpose of this study was to determine the effectiveness of the keyword learning strategy in seventh grade life science. Students were required to learn the names of the seven classes of the subphylum vertebrata, a representative species of each class, and two characteristics of the animals which belong to the class.

Forty-five students enrolled in the life science class at Glenwood Junior-Senior High School were administered a cloze passage test to determine their ability to read the seventh grade life science textbook. Their scores placed them in one of three reading levels: independent reader, instructional reader, or frustration reader.

It was hypothesized that there will be no significant difference in the unit test scores and in the two week delayed post test scores given to the keyword learning strategy independent, instructional, and frustration readers receiving the traditional lecture approach in the life science class.

The results of the t-test scores and the one way analysis of variance showed that there was no significant difference in the test scores on the unit and two week delayed post test in each reading group except the independent experimental group readers on the delayed post test. The mean scores for the frustration readers on the unit test and the two week delayed post test receiving the keyword strategy were higher than the frustration readers in the control group.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1987

Joan Bigler, Chairperson

THE EFFECTS OF DIRECT INSTRUCTION MNEMONICS ON FOURTH GRADE SCIENCE ACHIEVEMENT

Linda V. Ewald

Academic success depends on test-taking skills. Memory plays an important role in test-taking. The purpose of this research was to study the effects of direct instruction in FIRST-letter mnemonics on the science test scores of fourth graders. A comparison group received the usual training which consisted of exploratory, experiential curriculum. The mnemonics group scored significantly higher than the comparison group on the science test which was administered after the unit was completed. The results indicated that the nine and ten year old students could learn and apply the mnemonics to remember the information covered on their science test. Future research should investigate whether the FIRST-letter mnemonic strategy is effective in other content areas, such as social studies and health.

APPROVED BY RESEARCH COMMITTEE, NOVEMBER 1991

Sandra Reese, Chairperson

SECONDARY SCHOOL TEACHERS' ATTITUDES TOWARDS INTEGRATION OF SEVERELY HANDICAPPED STUDENTS INTO THE REGULAR CLASSROOM

Lori A. Fildes

PROBLEM: The purpose of this study was to assess teacher attitudes towards integrating severely handicapped students in a secondary school setting. The assessment will determine the range of attitudes teachers currently possess in the hopes that when integration does take place, the transition is a smooth and positive experience.

PROCEDURE: Eighty-one regular secondary education teachers were surveyed at Buffalo Senior and Junior High Schools in Buffalo, Minnesota. The Severely Handicapped Integration Attitude Survey (SHIAS) was administered to these instructors for the purpose of comparing regular education teachers' attitudes towards integration of severely handicapped students into the regular classroom. Three types of demographical data were analyzed and compared. The types of demographical data were: years of teaching experience, special education coursework taken, and experience with severely handicapped people.

FINDINGS: Sixty-three percent of the faculty responded to the survey. Results of the analysis of the data showed almost entirely neutral or near neutral responses. At the end of the survey, faculty were asked to respond to a personal statement. Some broad conclusions could be made from these responses.

CONCLUSIONS: It appears that regular education teachers are indifferent regarding their attitudes towards integration of severely handicapped people. Little or no special education coursework has been taken by experienced educators. Education and inservicing must begin before the movement towards integration can take place.

APPROVED BY RESEARCH COMMITTEE, NOVEMBER 1990

Eva Gadberry, Chairperson

PARENT INVOLVEMENT WITH THE SCHOOL

Ruth A. Gallagher

Recently, legislation was passed in the state of Minnesota to lay the groundwork for parental involvement. The new law requests the State Department of Education to develop guidelines and model plans for parent involvement programs.

While hundreds of current practices currently exist in schools across the country, it is important to gather information from parents about the type of involvement which they perceive as being effective in building strong partnerships with the schools.

This survey of parents in a local school district asked parents about their present attitudes, current practices and desired involvement in their children's education. While attitudes about the school were generally positive, parents did express a need for more specific information regarding the skills and homework practices their child needs to be successful in school. Parents indicated they could spend more time with their children in learning activities at home if they were given guidance from the school.

The results from this study conclude that parent involvement in this local school is effective, but communication between home and school needs improvement.

APPROVED BY RESEARCH COMMITTEE, FEBRUARY 1991

Floyd Ayers, Chairperson

DETERMINING THE DECISION MAKING ORIENTATION OF JUVENILE DELINQUENTS USING A MORAL DILEMMA TEST

Rosalind K. Gilbert

This study was conducted to measure the decision making style of 96 delinquents at the Minnesota Correctional Facility at Sauk Centre. A dilemma test was developed to measure three decision-making orientation (egocentric, peercentric, and culture-centric). Three hypotheses were generated from Kohlberg's theories and related findings: (1) delinquents make more egocentric orientation decisions than peercentric or culture-centric, (2) delinquents will make different decisions when statements have would in them than when they have should in them, (3) delinquents cannot identify the culture-centric responses. A comparison of four conduct disorder subtypes was also conducted. Sixty-six students were in these conduct disorder categories.

The Dilemma Test (name coined by author) was programmed for the Apple computer and was administered via computers. The test consisted of 16 dilemmas with one to five decision choices. Students made two types of decisions, what they **WOULD** do and what they **SHOULD** do. The results were tabulated by the computer. The reliability of the test instrument was determined by a three-day test/retest procedure. The reliability was determined to be sufficient for this type of research.

In general, the findings supported only one of the three hypotheses. The first and third hypotheses were not supported in that the egocentric scores were the lowest and that the majority of subjects (91%) could identify the should response. The second hypothesis was supported since over half of the items were changed by 61% of the subjects when the question stem changed from would to should. There were some differences between conduct disorder subtypes. It was also determined that there were no differences between male and female decisions on the Dilemma Test.

APPROVED BY RESEARCH COMMITTEE, NOVEMBER 1988

Floyd Ayers, Chairperson

THE EFFECTS OF SIGN LANGUAGE ON SIGHT WORD ACQUISITION AND RETENTION IN RETARDED INDIVIDUALS OF NORMAL HEARING

Tracy J. Gillispie

PROBLEM: The purpose of this study was to investigate the effects of a total communication approach on the acquisition and retention of sight words.

PROCEDURE: Five trainable mentally handicapped students who possessed no auditory, visual or physical handicaps were tested using an A-B-A-B multi-treatment design. The conditions were intervention A-verbal communication and intervention B-total communication.

FINDINGS: The significant findings were:

1. Treatment B-total communication appeared to be the superior approach.
2. The use of sign language did not impede the acquisition and retention of vocabulary.

SUMMARY AND CONCLUSION: The results of this study demonstrated that total communication was a more effective approach for teaching reading vocabulary to trainable mentally handicapped individuals. Further research employing similar procedures with a more varied and numerous subject population is needed before more generalized conclusions may be reached.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1988

James Lewis, Chairperson

SCHOOL PERFORMANCE FOLLOWING CHEMICAL DEPENDENCY ASSESSMENT AND/OR TREATMENT

Marilyn Benson Gritz

The research was designed to obtain information on students' success in their school careers after attending Country Place Youth Recovery Center (Country Place), a treatment center for chemically dependent adolescents located in Little Falls, Minnesota. Success in school was determined in relation to grade point average (G.P.A.) scores, drop-out rates, absenteeism, credits earned and class failures. The study compared two groups of students. The comparison group were chemically dependent students who completed at least the assessment period at Country Place and left without staff approval before completing treatment. The treatment group were identified as chemically dependent and completed the assessment period and the treatment program at Country Place.

The instrument used in this study was a questionnaire. Information was gathered by a telephone interview with a representative contact person in each school district or an examination of student cumulative files by the researcher. All of the information collected could be taken directly off a student's cumulative file.

The statistic used for the G.P.A. scores between the two groups was a covariate analysis of variance at the .05 significance level. The statistic used within each group was a two-tailed t test at the .05 significance level. Descriptive statistics are presented for drop-out rates, absenteeism, credits earned and class failures. There was no significant difference between the two groups for G.P.A. scores. There was a significant difference for G.P.A. scores between pre and post treatment for the treatment group only. Completion of treatment had a positive effect on G.P.A. scores for this group. Data for the students indicated that there was a difference in drop-out rates for the two groups. Twenty-three and three tenths percent of the students had dropped out for the comparison group and 3.3% of the students had dropped out for the treatment group. Students who completed treatment stayed in school at a much higher rate than those not completing treatment. The other dependent variables demonstrated little difference between the two groups. Absenteeism days differed by .375 days, mean credit earned was .5 credit and mean class failures differed by .223 failures for the two groups. Country Place closed on January 23, 1986, due to lack of funding.

This information will be of benefit to school officials, school counselors and treatment personnel in assessing the effectiveness of Country Place's treatment program in relation to school careers.

APPROVED BY RESEARCH COMMITTEE, NOVEMBER 1986
Joan Bigler, Chairperson

A SURVEY OF THE EDUCATIONAL NEEDS OF LD AND MMH YOUNG ADULTS

Sherrill J. Gatchell

PURPOSE: The purpose of this study was to determine how well Learning Disabled (LD) and Mildly Moderately Handicapped (MMH) young adults had made the transition from high school to the adult world of work. The study examined their living arrangements, job placement, types of classes taken in high school, and the independent living skills used in their daily lives.

PROBLEM: Handicapped students have struggled to become independent adults after leaving the structured world of school and family life. The survey results may provide direction for LD and MMH students' educational programs.

PROCEDURE: Thirty-two handicapped students who had graduated between 1982 and 1987 were interviewed to determine how well they had adapted to adult life. The interviews were done by questionnaire, phone contact, or parental interview with assurances of confidentiality.

FINDINGS: A majority of the LD and MMH young adults involved in the study were living at home with families. They were employed within two months after graduation and most of them reported finding their jobs with little or no assistance from others. They were generally working 40 hours or more per week. The job held most often by the handicapped adults was in the food service area and paid minimum wage. Their ability to use a checking account successfully was strong and many of them did their own shopping with fewer engaged in comparison shopping. Reading and math difficulties continued to be a problem for them.

SUMMARY AND RECOMMENDATIONS: Several recommendations were made as a result of the observations made during the study.

The handicapped student has abilities not shown in the results of the Weschler Intelligence Scale for Children-Revised (WISC-R) which is given to most handicapped students. Schools need to be aware of these skills. Administration of the NATB would allow schools to find these abilities and to build on them. Vocational and Life Skills programs would enhance existing core curriculums and give handicapped students a better chance of becoming independent adults.

APPROVED BY RESEARCH COMMITTEE, MAY 1990
Joan Bigler, Chairperson

THE EFFECTS OF A PARENT EDUCATION PROGRAM ON THE IEP PROCESS FOR ELEMENTARY AGE CHILDREN

Patricia A. Hoffman

PROBLEM: The purpose of this study was to determine if a parent involvement program would contribute to an increase in active participation by parents in determining goals and objectives on their child's IEP. A group of 85 parents of learning disabled and educable mentally handicapped students in grades one through six in District 88 were rated by teachers on their participation in their child's educational planning.

PROCEDURES: Of the eligible parents, 11 actually attended a parent education workshop. Those parents were compared to a control group (N=20) who had indicated an interest in attending the workshop but did not actually attend, and another group of parents who did not indicate an interest in attending the workshop (N=48) and who did not attend the workshop. All parents of learning disabled and educable mentally handicapped students in grades one through six were rated by teachers as to their level of participation in the IEP process. In addition parents who attended the workshop were given a parent involvement self report as a pre-test and post-test. The differences in groups were analyzed to determine if statistically significant differences existed between the groups.

RESULTS: A statistically significant difference was found between the experimental group and the other groups in all areas rated by teachers. Because some of the differences were expected due to differences in level of involvement of mothers and fathers, and level of involvement of parents who would volunteer for a parent training program and those who would not, a post hoc test, Scheffé method, was used to determine which of those differences were likely to be due to the parent education program rather than actual differences in the make-up of the groups.

It was concluded that the areas most responsive to change were teacher contact, total involvement, understanding of educational terms and understanding of parental rights and responsibilities.

RECOMMENDATIONS: It does appear that a parent education program can influence parent participation in the IEP process. Further research should continue using larger sample sizes. In addition, research could be directed toward comparing teacher groups in their encouragement of parental participation. Research could also be directed into alternative methods of presenting information to parents.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1987

James Lewis, Chairperson

EFFECTS ON ACHIEVEMENT FOR JUNIOR HIGH STUDENTS IN RELATIONSHIP TO SINGLE-PARENT AND TWO-PARENT FAMILY STRUCTURES

Thomas Robert Hoffman

This report examines the effects on achievement for junior high students with regard to single-parent and two-parent family structures. Data was collected on two groups of 49 students enrolled in grades seven through nine. The groups were matched in terms of grade, sex, socioeconomic status, educational services and grade point average. Achievement areas compared were Reading, Language Arts, Math, and Total Test scores. Standard t-tests were used to analyze the data. The results of this study indicate that children from single-parent families do not achieve significantly different than do children from two-parent families.

APPROVED BY RESEARCH COMMITTEE, MAY 1989

James F. Lewis, Chairperson

THE EFFECTIVENESS OF PRETEACHING CONTENT VOCABULARY TO INCREASE ORAL READING RATE AND WORD ERRORS IN SCIENCE TEXTBOOKS

Mary Katherine Holden

The purpose of this study was to determine the effectiveness of a direct instruction strategy of preteaching content vocabulary to fourth-grade students with learning disabilities in order to increase their oral reading rate and reduce the

number of word errors while reading random passages from their curriculum science textbooks at their reading and grade level.

Three fourth-grade students with learning problems in reading were observed and measured for their reading rate with and without the intervention strategy. The entire procedure was done in five parts, baseline at reading level, intervention at reading level, return to reading level baseline, intervention at grade level, and baseline at grade level (A B A C A). Each baseline phase ran five days while the intervention phases ran ten days each, making the entire study 35 days in duration.

Results indicated that the preteaching intervention did increase reading rate and decrease word errors in the student's reading level science text but did not produce increased rate and decreased errors in the grade level science text. The varied readability levels within the selected passages of the grade level text was suggested as a factor in lack of improvement in grade level reading scores.

APPROVED BY RESEARCH COMMITTEE, MAY 1991

Joan Bigler, Chairperson

SEX DIFFERENCES IN READING AND MATHEMATICS ACHIEVEMENT IN AN ALTERNATIVE SECONDARY PROGRAM

Nancy A. Huber

PROBLEM: This study was concerned with sex differences in reading and mathematics achievement. The girls and boys whose achievements were studied had been referred to an alternative secondary school program in Central Minnesota.

PROCEDURE: The reading and mathematics achievement scores based on the results of the Woodcock-Johnson Psycho-Educational Battery, Part II (Tests of Achievement) were compared by gender in total groups and in subgroups containing handicapped and non-handicapped girls and boys. Each group and subgroup was also compared to itself for differences in reading and mathematics achievement. A t-test analysis at the .05 level of significance was employed.

RESULTS: When all of the boys were compared to all of the girls, a significant difference was found in mathematics achievement. The difference was in favor of the girls. A significant difference was also found when handicapped boys' achievements were compared for reading and mathematics. The difference was in favor of reading. Although other groups were compared, no other statistically significant differences were found.

APPROVED BY RESEARCH COMMITTEE, NOVEMBER 1987

Floyd W. Ayers, Chairperson

SOS: A LIMITED ALTERNATIVE PROGRAM FOR NONACHIEVING JUNIOR HIGH STUDENTS

Ronald Allan Johnson

PROBLEM: There are students who have not had their educational needs met. These students may become unmotivated/frustrated and often drop out of high school.

PROCEDURE: In the SOS Program a special education teacher worked with a classroom teacher as a team. Instruction was presented by the classroom teacher, followed by individual and small group instruction. Small group instruction focused on mastery of skills according to ability level. Students' work habits were charted daily in their classes.

Academic/failure rolls were reviewed each quarter and recorded. Students in grades 9-12 completed a study skills survey to determine what study skills training they had received. Data was collected on educational outcome for students in the program.

RESULTS: All students in the program who remained at Annandale High School graduated. More students obtained honor roll status while in the program. The failure rate was found inconclusive. It appears that the program addressed the needed skills of the students.

DISCUSSION: It appears there are preventative aspects to the program. However, further research is needed to be conclusive.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1986

Stanley Knox, Chairperson

THE EFFECTIVENESS OF THE HANDICAPPED STUDENT SERVICES PROGRAM AT ST. CLOUD STATE UNIVERSITY

Barbara A. Kearn

This study describes the Handicapped Student Services Program (HSS) at St. Cloud State University for undergraduate and graduate learning disabled students. The program's structure and service delivery system were compared to successful programs presently used on the secondary and post-secondary level throughout the United States. A survey of past and present St. Cloud State University students was conducted to assess their views on the program's relative success in addressing academic and social skills concerns. Results of the survey did not tend to support earlier research findings that learning disabled college students are less independent. It also did not substantiate previous findings that LD students tend to transfer into four year colleges from junior colleges. Students in the present study chose majors which did not reflect an avoidance pattern of careers favoring reading and writing skills. In past research, the failure to join clubs and organizations while in college was suggested as proof of the lack of social skills on the part of LD students. Respondents to the present survey stated they had few concerns over making friends, but rather were far too busy keeping up with the academic work load to participate in many organized activities.

The services of the Math, Reading, and English Skills Centers were described as less than effective by a large portion of the respondents. Other strengths and weaknesses of the HSS program were discussed. Some recommendations were suggested, based on survey comments, for HSS to provide a more comprehensive program similar to that of other comparable institutions.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1988

Sandra Reese, Chairperson

STRENGTHENING ACADEMIC PERFORMANCE THROUGH THE USE OF PRECISION TEACHING

Elizabeth Kay Keefer

PROBLEM: The purpose of this study was to determine the effectiveness of Precision Teaching when used with educable mentally handicapped students. The objective was to determine whether or not Precision Teaching could indeed increase the academic success of the students involved.

PROCEDURE: Ten educable mentally handicapped students ranging in grades from second through sixth participated in this study. A technique called Precision Teaching was explained to the students and the program began. Daily one-minute timings of basic addition and/or subtraction facts were given. Each student began at their appropriate learning level and continued working sequentially throughout the program. Once a goal was obtained, the next objective in the sequence was started. Daily one-minute timing results were charted and an acceleration statement was made for each student. A reinforcement program was initiated at the beginning of the fourth week. Students reaching their goal received a student-selected reinforcer.

FINDINGS: Of the ten subjects involved in the present study, all but one obtained their initial goal set from the written addition and/or subtraction objectives. Two subjects obtained their goal on the next objective in the sequence and three other students obtained their goal on the next two objectives in their sequence.

SUMMARY: Slow academic gain of math facts was being made using this technique. The reinforcement used with this program appeared to have little significance in the outcome of this study. The program itself was motivating enough to keep the students interest.

APPROVED BY RESEARCH COMMITTEE, MAY 1987
Floyd Ayers, Chairperson

DIRECT INSTRUCTION EXPRESSIVE WRITING PROGRAM AND ITS EFFECT ON THE WRITING APPREHENSION AND WRITING ABILITY OF LEARNING DISABLED STUDENTS

Maureen Kelly-Carroll

The purpose of this study was to determine the effects of the Expressive Writing 2 program on the writing apprehension and sentence writing abilities of senior high school LD students. In addition, the study compared the effects of that program to the effects that an unstructured teaching approach had upon the students' writing apprehension and sentence writing skills.

Ten learning disabled students in grades 9-12 were involved in this study. Five students were in the test group and five students were in the control group. Two pretests, consisting of Revision 2 of the Daly and Miller Writing Apprehension Scale and a paragraph sample, were given to each student at the beginning of the study. The test group was taught the Expressive Writing 2 program, and the control group was taught from a variety of the instructional resources in writing. At the end of the Expressive Writing 2 program, students in both groups were given post-tests, which were administered in the same manner as the pretests.

Using the Paired Difference Test, it was determined that neither group significantly reduced their writing apprehension or showed significant improvement in either of the two measures (percentage of complete sentences and mean T-unit length) that were used to assess sentence writing skills.

In conclusion, this study shows that the Expressive Writing 2 program did not have a statistically significant effect on writing apprehension or sentence and paragraph writing skills in high school LD students. However, there was some evidence that the program helped students increase their writing skills, and that the program was more helpful in that regard than an unstructured teaching approach.

APPROVED BY RESEARCH COMMITTEE, NOVEMBER 1990
Joan Bigler, Chairperson

A FOLLOW-UP STUDY OF MILDLY MENTALLY HANDICAPPED STUDENTS FROM ELK RIVER SENIOR HIGH SCHOOL, ELK RIVER, MINNESOTA

Lucy C. Knapp

PROBLEM: The purpose of this study was to investigate the post high school status of mildly mentally handicapped graduates from Elk River Senior High School. The areas investigated were (a) degree of social integration in the community, (b) status of employment, (c) utilization of post-secondary training programs, and (d) evaluation of high school program.

PROCEDURE: This sample for the study consisted of 34 high school graduates from the mildly mentally handicapped program from Elk River Senior High between the years 1982 and 1987. While attending Elk River, all of the subjects participated in the Mildly Mentally Handicapped resource program and/or the work experience program. I.Q. scores of the subjects ranged between 50 and 80, as did scores on adaptive behavior scales. There were 22 males and 7 females that were contacted and interviewed for the study. The questionnaire was developed by the author to gather information in the four different areas. Data was summarized in tally form and averaged.

RESULTS AND CONCLUSIONS: The results of the study indicated that 79.3% of the subjects are making an adequate transition into the working world. Overall the subject expressed a very positive reaction to what they learned in high school. Areas investigated showed that the subjects are putting to use what they have learned in high school in working and living independently in the community. The following three recommendations were made based on analysis of data collected in the study.

1. Students need to gain knowledge and practice social skills in social settings in the high school. This may lead graduates to become more involved with social groups in their communities.
2. Students need to be exposed earlier in their school years to the facilities, agencies, and services available to them after graduation.
3. Additional experiences are needed in the career area to decrease job mobility from happening. A job shadowing program could be an effective way of giving students information and experiences about different careers.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1988

James F. Lewis, Chairperson

MINIMUM COMPETENCY TESTING PROGRAMS AND GRADUATION REQUIREMENTS OF HANDICAPPED STUDENTS

Beverly J. Lundorff

PROBLEMS: Since the mid-1970's, school districts have become involved in establishing minimum competency testing programs as a standard of proficiency for grade placement and/or graduation from high school. Administrators, special educators, parents and others should be concerned about the implications for handicapped children. The purpose of this paper was to determine how many schools in Minnesota were using minimum competency testing programs and how many had established a specified policy towards the handicapped for inclusion or exclusion from the program.

PROCEDURE: The population of this study consisted of 67 public school districts in Minnesota. The attempt was to include non-metropolitan districts from a large geographic area of the state and to have an equal number of schools in each size category: under 1,000; 1,000 to 3,000; and over 3,000. The instrument in this study was a questionnaire designed by the researcher. The questionnaire and a self-addressed, stamped return envelope were mailed to the superintendent of each school district with a cover letter asking for assistance.

RESULTS: The data was tabulated based on the number of districts responding to each question. The question to be answered was whether schools had established a specified policy concerning the handicapped student and minimum competency testing and whether a standard diploma was being presented to each handicapped student upon completion of her/his high school program. Fifty-six of the school districts returned the questionnaires within the specified two-week time period. The remaining eleven were contacted by telephone and the responses were recorded by the researcher. A minimum competency testing program had been implemented in 22% of the districts surveyed. The results of the first twelve questions of the survey indicated that few schools had established a specified policy concerning handicapped students and minimum competency testing. The results of the last two questions indicated that many school districts do not have a specified policy concerning graduation of handicapped students.

CONCLUSIONS: The sampling was adequate to determine that non-metropolitan schools had not established a policy concerning the inclusion or exclusion of handicapped students from minimum competency testing programs. Determining the nature of any policies that were indicated needed to be done cautiously because of the size of the sample. The results also indicated that each district determined which handicapped students had earned a diploma and which had not.

APPROVED BY RESEARCH COMMITTEE, FEBRUARY 1987

Floyd Ayers, Chairperson

RATING STUDENT DEPRESSION BY TEACHERS AND STUDENTS

Charles Maternus

This study examined how students who rated themselves using self-reports would compare to teachers who rated those same students concerning depression. In this process the pertinent question of whether one instrument has enough weight to identify depression as an educational handicap was addressed and if students rated themselves more depressed than how teachers rated those same students.

A sample of 51 tenth graders from a Health class were rated by their health teacher, their English teacher, and a special education teacher who taught seven of the students written language. The students rated themselves with a redesigned Behavior Evaluation Scale (BES) and the Childhood Depression Inventory (CDI) in a group setting while the teachers rated those students with the BES and a redesigned CDI in a self-report form.

The results of the study showed through a Pearson Correlation that there were not many significant connections among the inter-group ratings with teachers and students with the CDI or the BES. Further studies are recommended to investigate a system to reliably identify childhood depression.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1990

Eva Gadberry, Chairperson

THE MOST COMMONLY USED PRE-REFERRAL INTERVENTIONS PRIOR TO REFERRAL TO SPECIAL EDUCATION

Margaret McHaney

The purpose of this study was to determine the most commonly used pre-referral interventions used by the teaching staff in a small rural elementary district prior to referral to special education. Since reading and math were the two most frequent reasons for referral to special education the interventions on the survey were related to those subjects. Intervention choices were placed into the following five categories: methods, behavioral, structural change, information and materials, and the frequency of use was tabulated.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1987

Floyd Ayers, Chairperson

THE EFFECTIVENESS OF AN AFFECTIVE EDUCATION CURRICULUM ON SELF-ESTEEM AND SCHOOL BEHAVIOR

Julie Hertzog Millerbernd

The purpose of this study was to determine if teaching the affective curriculum, Project Self-Esteem, to fourth and fifth grade students would increase their self-esteem, manifested in improved classroom, school-wide behavior.

The study employed a quasi-experimental pretest-posttest design comparing total scores from the Coopersmith Self-Esteem Inventory and the Behavioral Academic Self-Esteem rating scale.

Fourth and fifth grade students in the experimental school were provided with instruction utilizing Project Self-Esteem while students at the comparison site were not. The strategy was employed for one and a half academic school years.

Analysis of variance yielded mixed results. There was no significant difference comparing posttest scores of the Coopersmith Self-Esteem Inventory, although the mean score for the experimental group increased 7.53 points while the mean score for the comparison group increased 3.46 points. There was a significant difference when comparing posttest scores on the Behavioral Academic Self-Esteem rating scale with the comparison group attaining the higher score. These results warrant further research in strategies to improve self-esteem in students.

APPROVED BY RESEARCH COMMITTEE, MAY 1990

Joan Bigler, Chairperson

A STUDY OF THE CONSISTENCY OF LEARNING DISABILITY ELIGIBILITY DECISIONS MADE WITH THE WOODCOCK-JOHNSON PSYCHO-EDUCATIONAL BATTERY DISCREPANCY MODEL

Nellene Weckwerth Missling

Minnesota Department of Education Learning Disability Guidelines include a discrepancy model as a major component in the determination of eligibility for services as a learning disabled student. The Woodcock-Johnson Psycho-Educational Battery was developed to assess this discrepancy. This battery has been employed in the Becker Public Schools since 1979.

This study investigates the stability of Woodcock-Johnson Psycho-Educational Battery discrepancy model decisions on the eligibility of learning disability services of children referred to the child-study team of the Becker Public Schools, Becker, Minnesota, between 1979-80 school year and 1984-85 school year.

File data on 28 subjects were examined. The subjects were divided into two groups: 17 subjects whose initial assessment was completed in first or second grade, and 11 subjects whose initial assessment was completed in third or fourth grade. Hit rate contingency tables were constructed for both groups for reading, math, and written language subject areas.

Results of the study showed that in the area of reading there was a considerable disagreement between initial and reassessments when the initial assessments were done in first or second grade. The data suggest that the decisions are not comparable. This was not the case for children whose initial assessment occurred in third and fourth grades. For these children, initial and reassessment decisions were, for practical purposes, the same.

APPROVED BY RESEARCH COMMITTEE, MAY 1988

Floyd Ayers, Chairperson

A SURVEY OF EARLY CHILDHOOD INTERVENTION NEEDS

Kathleen Lois Munsch

PROBLEM: This study examined the responses of parents of disabled preschool children to a questionnaire regarding medical, social and educational services received by their children. The children at the time of the study ranged in age from seven months to six and one-half years of age. All of the subjects were identified as handicapped and receiving early childhood special education services in the Minnesota Valley Cooperative Special Needs Program.

PROCEDURE: The sample for this study consisted of 32 handicapped preschool children in a rural southwestern community. A return rate of 76% was obtained from an initial population of 42. The measurement instrument was developed by the author to gather information regarding parental satisfaction of specialized services. The questionnaire dealt with prenatal and natal information regarding early experience with difficulties, referral to special education services and the child's current special education status. The data were summarized using descriptive statistics.

SUMMARY AND RECOMMENDATIONS: This study found that 70% of the respondents experienced either prenatal or perinatal complications. Most of the children (90%) exhibited problems that caused parental concern during their preschool years.

Identification for services from the special education unit occurred through both medical and preschool screening referral. There was considerable overlap in these two identification procedures.

Eighteen (56%) of the subjects were satisfied with the services that had been provided to them by specialized health care programs. Fourteen (44%) were dissatisfied with the services and some of the families had multiple concerns.

In the future, any studies directed toward these individuals should develop a less ambiguous questionnaire that allows for more ready interpretation of data.

A second recommendation would be a case-by-case analysis to insure that children are being identified and serviced in an early childhood special education program.

A final recommendation relates to the concern about the nature of specialized services. A case-by-case analysis would provide an explanation about the nature of parental concern and provide a basis for an improvement of specialized services.

APPROVED BY RESEARCH COMMITTEE, MAY 1990

Floyd Ayers, Chairperson

CUMULATIVE RECORD FOLDER CORRELATES OF LEARNING DISABILITIES

Candice J. Nelson

The purpose of this paper was to identify variables readily available in students' cumulative record folders which would potentially serve as screening items and differentiate the learning disabled student from the slow learner. Many potentially eligible learning disabled students may go unidentified as the majority of LD referrals are teacher initiated. A more consistent and objective referral system would assist school districts in more accurately servicing their learning disabled population. Through the examination of cumulative record correlates at the high school level, several items exhibited the potential of differentiating a LD student from a slow learner. Recommendations are made for further research in the area of determining characteristics generally exhibited by learning disabled students.

APPROVED BY RESEARCH COMMITTEE, NOVEMBER 1987

Floyd Ayers, Chairperson

THE PERFORMANCE OF LEARNING DISABLED STUDENTS IN SCIENCE CLASSES

William A. Ness

PROBLEM: This study involved an ex post factor analysis of data comparing the performance of learning disabled to non-learning disabled eighth grade physical science students on a teacher-made posttest. The independent variables were not manipulated and the groups were not randomly assigned.

PROCEDURE: Scores were obtained from learning disabled, educable mentally handicapped, and non-special education students who were taught in either a mainstreamed setting or structured class setting. The structured class involved both a mainstream teacher and a special education teacher with modified instruction, labs, and tests. T-tests and an analysis of covariance were used to determine if there were any statistically significant differences between the groups. Pearson correlations were used to determine if Comprehensive Test of Basic Skills reading scores and Woodcock-Johnson ability and achievement scores correlated with performance on the science posttest.

RESULTS: The educable mentally handicapped students made no significant gains on the posttest. There was no significant difference in performance between the learning disabled students in the structured class and the learning disabled students in the mainstreamed class. The learning disabled students performed similar to the non-special education students in the structured class but had a mean posttest score that was significantly lower than the non-special education students in the mainstreamed setting. While some learning disabled students performed well on the posttest, the mean posttest scores were lower than the mainstreamed non-special education students. Woodcock-Johnson scores did not correlate with performance on the science posttest. The Comprehensive Test of Basic Skills reading score correlated with the performance on the science posttest for the entire sample but not for the special education students.

APPROVED BY RESEARCH COMMITTEE, FEBRUARY 1989

James F. Lewis, Chairperson

STAFF DEVELOPMENT: A NEEDS ASSESSMENT FOR SPECIAL EDUCATION

Lois H. Nordling

The purpose of this field study was to develop and systematically administer an assessment instrument designed to identify the training needs of regular educators, special educators, and support staff who work with handicapped students in the Osseo Area Schools.

A needs assessment instrument incorporating the characteristics of effective staff development cited in the literature was developed. A total of 144 staff completed this questionnaire. Approximately one quarter of the respondents

were regular educators. In characterizing the education and experience of the respondents, over fifty percent held advanced degrees and had ten or more years of experience in public education.

Responses from the questionnaire were tallied and analyzed. A list of the ten highest training needs was generated for each category of staff-regular educators, special educators and support staff as well as the position groups within each category. The questionnaire also generated a list of district staff who would be willing to share their knowledge and expertise.

Four topics were identified as training needs by all three staff categories. Thus, it was suggested that a non-categorical approach to staff development training be implemented and that these topics be addressed initially. Establishing a planning committee representing regular educators, special educators and support staff, working cooperatively with the district's Staff Development Center, incorporating the questionnaire into the district's staff evaluation system, and routinely assessing staff training needs are recommended.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1986

Stanley Knox, Chairperson

PREPARATION FOR TRANSITION FROM RESIDENTIAL TREATMENT CENTERS IN MINNESOTA

Carolyn (Philipsek) Otto

PROBLEM: This study specifically examined whether residential treatment centers in Minnesota have transition programs in place for students exiting their facility. It also examined the transition programs that are presently being implemented to determine if they include the components that literature has found to make quality programs.

REVIEW OF LITERATURE: The literature revealed specific definitions of what transition is, components that make an effective transition program, and transition programs that have been designed and tested in educational settings.

RESEARCH PROCEDURES: One hundred and five residential treatment centers in Minnesota were initially sent surveys to determine if there was an existence of transition programs. The survey instrument was an author-developed survey. It consisted of 23 questions. These questions were designed to determine if each facility possessed any of the components that were described in the literature which makes an effective transition program, the number of facilities that actually had transition programs, and for those facilities that did have a program, what the transition program consisted of. The survey instrument was administered on October 17, 1989. A follow-up survey was administered on November 25, 1989. A general analysis was completed after December 15, 1989.

FINDINGS: The analysis yielded the following conclusions:

1. No prominent correlations were found between the participating facility's background information and whether the facility did or did not have a transition program.
2. More of the participating facilities did have programs which emphasized adjustment skills. More of the participating facilities also send receiving schools information on the students who will be attending them.
3. Fifty-six percent of the participating facilities have transition programs. Forty-one percent of the facilities do not have actual transition programs.
4. The majority of facilities with transition programs have an entrance and/or exit criteria, have modeling of appropriate behaviors for the residents to observe, and involve the receiving school in the transition program.

5. Three-fourths of the participating facilities responded positively to questions that asked if they felt the residents were successful in the receiving school, and if the facility felt its program was successful.

RECOMMENDATIONS: More settings should establish formalized transition programs after concluding that there is a low incidence of transition programs in residential treatment centers. Based upon the findings, the following three ideas were generated for future investigations.

First, examine in detail facilities who have stated that they have a transition program in place for their residents. Second, examine in detail facilities who do not have a transition program in place. With detailed information on both facilities who do have transition programs and facilities who do not have transition programs, a clearer understanding of what Minnesota residential treatment centers' transition programs presently consist of and what facilities without transition programs do in regards of preparing residents for exiting the facility can be obtained. Third, compile information on what the needs are of facilities who do not have transition programs. With this information, a transition program could be designed to meet the needs of these facilities.

APPROVED BY RESEARCH COMMITTEE, MAY 1990

Eva M. Gadberry, Chairperson

VERBAL PARTICIPATION OF CHILD STUDY TEAM MEMBERS DURING SPECIAL EDUCATION STAFFINGS

Linda J. Patterson

The frequency and type of verbal participation by parents and professional staff at referral and assessment sharing staffings during the 1981-1982 and 1985-1986 school years were investigated. Twenty-eight recordings were made and analyzed by using a combined Sattler-Miller System and Bales System. The average length of time of staffings has increased while the average number of people attending has remained relatively the same. Participation of parents and the speech therapist increased at referral staffings. Participation of classroom teachers decreased. Participation of other team members remained relatively the same. At assessment sharing staffings, parent participation remained the same. An increase was found for one Special Education teacher and the speech therapist. Participation of other team members remained relatively the same. Parents give more information at referral staffings now as does the principal. All team members increased in asking for information. Most information and recommendations given at assessment sharing staffings are given by people with actual assessment data. While the study results indicate that parent participation has increased, these results must be interpreted cautiously due to the limitations of change of membership and format at the staffings. However, this study also has implications for utilizing this instrument for measuring leadership style, parent training, and experience of the team members.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1986

Sandra C. Reese, Chairperson

T. M. H. FUNCTIONAL LIVING SKILLS AS AFFECTED BY READING LEVEL

Cheryl L. Pennington

Teaching reading is not usually a strong component in the curriculum for trainable mentally handicapped students. Reading is not a realistic goal for all trainable mentally handicapped students. However, by not being offered the opportunity to learn to read, many TMH students are being denied access to a skill which would directly affect their level of independence and functioning within society.

The present study examined whether trainable mentally handicapped persons who could read performed a vocational training skill with greater accuracy and less assistance than their non-reading peers.

Twenty subjects, ages 18-57, met the requirements of primary diagnosis mental retardation, current I.Q. scores between 35-51, and clients of a transition program for adult students. On the basis of three reading pre-tests, eleven subjects were identified as readers. Nine subjects were classified as non-readers. Subjects were assigned into two instructional method groups. Half of the readers and non-readers received instruction for loading a maid cart with supplies utilizing a word plus picture cue card. The remaining subjects learned the identical task solely using a picture cue card. Data was collected on the accuracy (score of correct items placed on maid cart out of a possible 45) and assistance (number of requests for help).

A two-tailed Mann-Whitney U Test was used to calculate significant differences between various samples. An overall conclusion for the accuracy tests is that the written word cues had no effect on performing the task. Significant differences were noted in requests for assistance by readers using word plus picture cues compared to non-readers using the same cues. Readers requested significantly less assistance using word plus picture cues than readers solely using picture cues. Informal analysis of the data indicated that regardless of the method, readers scored higher or requested less assistance than non-readers. Further research is needed to justify and to develop successful, appropriate and functional reading instruction for trainable mentally handicapped students.

APPROVED BY RESEARCH COMMITTEE, MARCH 1988

Sandra Reese, Chairperson

A TRADITIONAL REFERRAL PROCESS AND TWO VARIATIONS OF A PREREFERRAL PROCESS AND THEIR AFFECT ON FORMAL REFERRALS TO SPECIAL EDUCATION

Gail Rains

This study was designed to provide descriptions of a traditional referral process and two variations of prereferral intervention models. The subjects of this study included 800-900 seventh, eighth and ninth grade students from a large midwestern suburban school district. The hypothesis that a prereferral intervention process would reduce the number of formal referrals made to special education was investigated. The results were documented with regard to: (1) the total number of students discussed each year, (2) the number of requests by classroom teachers for consultation services, (3) the number of students formally referred to the Child Study Team (CST) or the special education team, (4) the number of psychoeducational assessments conducted and (5) the number of placements in special education programs. The data was collected over a three year period. The statistical significance of the difference among the three models was determined using the chi-square test of independence.

Documented analysis of the data was given to support the hypothesis. Formal referrals were reduced in all three models with the largest reduction occurring during the implementation of the Teacher Assistance Team (T.A.T.) model. The T.A.T. model was also determined to be most effective in reducing the number of assessments and placements into special education.

APPROVED BY RESEARCH COMMITTEE, MAY 1991

Dr. Fred Reese, Chairperson

ATTITUDES TOWARD MAINSTREAMING MILDLY HANDICAPPED STUDENTS AND REGULAR EDUCATORS' PERCEIVED COMPETENCIES IN TEACHING THEM

Martha E. Risch

PROBLEM: The purpose of this study was to examine the attitudes of classroom teachers in the St. Cloud School District toward mainstreaming, their perceived competency in teaching mildly handicapped students, and the support available to them. The effect of some demographic factors was also explored.

PROCEDURE: A 30 item questionnaire was distributed to a random sample of 45 teachers from grades one through six. Items were rated on a Likert-type scale and responses were reported as percentages.

FINDINGS: Most of the elementary classroom teachers sampled reported positive attitudes toward mainstreaming. Few teachers felt confident in individualizing instruction for these students and they expressed a desire for increased support in their efforts. Few teachers reported having many college courses, inservices or workshops on handicapped students and no conclusions were drawn as to their affect on attitudes in the St. Cloud School District. The grade level taught did not affect teachers' attitudes.

APPROVED BY RESEARCH COMMITTEE, MAY 1990

Joan Bigler, Chairperson

EFFECT OF SOCIAL SKILLS INSTRUCTION ON SELF-CONCEPT AND SOCIAL SKILLS OF EMOTIONALLY/BEHAVIORALLY DISORDERED STUDENTS

Vicki M. Roberts

The purpose of this study was to determine if teaching Skillstreaming the Elementary School Child (McGinnis & Goldstein, 1984) would have a positive effect on the self-concept and social skills of elementary E/BD students.

The study employed a variation of time series design, comparing pre-test and post-test scores from three assessment measures: Piers-Harris Children's Self-Concept Scale, Student Skill Checklist (McGinnis & Goldstein, 1984), and Teacher Skill Checklist (McGinnis & Goldstein, 1984).

Skillstreaming the Elementary School Child (McGinnis & Goldstein, 1984) was used as a guide for teaching pro-social skills to a group of seven E/BD students. The students received 30 minutes of instruction daily for 28 weeks.

The results of the self-concept assessment could not be used to support the hypothesis since the results were generally variable and lacked significance. The social skills assessments support the hypothesis in part--social skills training appeared to increase the use of social skills by this group. The extent to which this increase was influenced by the social skills treatment, however, is unclear due to the small sample size and lack of a control group.

APPROVED BY RESEARCH COMMITTEE, FEBRUARY 1991

Joan Bigler, Chairperson

PARENTAL EXPECTATIONS OF HANDICAPPED STUDENTS INTEGRATING INTO SECONDARY MAINSTREAM CLASSES

Mary M. Saxon

This study examined the parental expectations of integrating moderate to severely handicapped students into secondary mainstream classes. Often parents are influenced into educational decisions for their child because of pressures surrounding them. This survey gave parents an opportunity to confidentially voice their opinions on the type of integration they prefer for their child.

Fifty-seven parents of moderate to severely handicapped students were sent a two-page questionnaire. This sample represented the population of moderate to severely handicapped students between eleven and eighteen years of age. Of the fifty-seven households surveyed, 52% returned the completed survey.

The study found that, although parents are in favor of some type of integration for their child with non-disabled peers, these areas were usually of a non-academic realm. The majority of parents expressed concerns toward integration at the secondary school level. These concerns were shown as disadvantages or hesitations stated by parents of moderate to severely disabled students at the secondary school level.

APPROVED BY RESEARCH COMMITTEE, NOVEMBER 1990

Eva Gadberry, Chairperson

ROLE/FUNCTION OF MIDDLE MANAGEMENT IN SPECIAL EDUCATION

Lorie Jean Schulstad

PROBLEM: The role and function of "middle management" in special education is quite elusive based on a review of the literature. Since much of the training for these positions has been "on-the-job" training, it was assumed that this position would be constructed quite differently from one cooperative to the next. It was felt that variables such as: a person's work setting, number of year's experience on the job and the type of license held by a coordinator would influence the function and job responsibilities of a special education coordinator. Another question explored by this study was whether or not there was a difference between what directors of special education felt to be the responsibilities of coordinators and what these responsibilities actually are based on what coordinators listed as being their duties. This study attempted to define the role and function of special education coordinators and looked at the affect of the variables listed above on a coordinator's position.

METHOD: A questionnaire was sent to directors of special education and to special education coordinators in corresponding districts or cooperatives in regions four, five, six, seven, and eight in central Minnesota. A total of fifty-seven questionnaires were distributed. A list of functions and responsibilities were outlined in the questionnaire. The participants were to rate this list in terms of its importance of the position of the coordinator and the frequency of occurrence of the various responsibilities.

The questionnaire was analyzed by computer as to the variables listed above (i.e., work setting, etc.). Results are reported in terms of percentages, frequency of occurrence and the mean number of responses. Chi-square was used to report any significant differences in variables.

RESULTS: There were sixteen responsibilities which were identified as frequent duties for coordinators (see page 36). The two top rated responsibilities were: 1) monitoring due process and assuring compliance, and 2) providing cooperation and integration of special education and mainstream. The only duty for which coordinators are not viewed as being responsible is that of "developing a special education budget".

The function of "facilitator-trainer" was rated as most important to the position of a coordinator and was also the most frequently occurring function.

The variables which could possibly affect a coordinator's role and function (i.e., work setting, type of license, and number of years of experience) showed minimal, if any, differences.

Coordinators and directors were very close (if not identical) in their perception of the functions and responsibilities for coordinators. The variation in their perception appears to come in the "degree" to which a coordinator was responsible for a specific duty (i.e., occasionally to frequently responsible).

CONCLUSION: This study accomplished the purpose of defining the major functions and responsibilities of coordinators. Based on the consistency of the responses of all participating in the study, the position of special education coordinator is far more stable (in central Minnesota) than one might have imagined.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1986

Stanley Knox, Chairperson

VIDEOTAPING AS AN ADJUNCT TO PARAPROFESSIONAL INSERVICING

Colleen M. Smith

PROBLEM: The purpose of this study was to analyze the use of videotaping paraprofessionals working with students with behavior concerns as an adjunct to the inservicing process.

PROCEDURE: In the fall of 1991, seven paraprofessionals from the Anoka-Hennepin School District were asked to volunteer to be videotaped working with severe/profound and mild/moderate handicapped behavior students. The paraprofessionals participated in a pre-inservice, a videotaping session, and a post conference upon which they then filled out the evaluation form.

FINDINGS: Data was collected from the completed evaluation forms. Simple tabulation from a Likert-type scale was used to find the frequency, percent, mean, and item response. The results show that paraprofessionals overwhelmingly agreed to the fact that videotaping does provide an adjunct to the inservicing process. The conclusion could be drawn that this would be a successful avenue to pursue in the future for efficacy in inservicing to provide consistency for those students with severe/profound and mild/moderate handicaps and behavior concerns.

APPROVED BY RESEARCH COMMITTEE, MAY 1992

Eva Gadberry, Chairperson

THE EFFECT OF AN ATTENDANCE POLICY ON STUDENTS' COMMITMENT TO PRESENCE AND ACHIEVEMENT IN THE SECONDARY SCHOOL SETTING

Thomas Stapel

PROBLEM: The implementation of attendance policies has not been a focus of attention in secondary mainstream classrooms. Evidence indicates teachers strongly believe that school attendance has a direct correlation with school success. This research was designed to assess the effect of an attendance policy on students' commitment to presence and achievement in school.

SAMPLE: The study consisted of 149 male and female students from ninth through twelfth grades in a secondary class setting in Central Minnesota. The classes included both special education and non-special education students.

METHOD: A quasi-experimental design was used to test the effect of stated attendance expectations and visual reinforcement on students' behavior of attendance. Measurement consisted of attendance points tied to a final grade which were tabulated by two instructors for a total research time of eleven weeks.

RESULTS: Results of this study revealed that no overall significant changes occurred in student attendance. Changes in attendance were evident after manipulation, but did not result in a continued trend toward increased attendance.

CONCLUSIONS: The findings of this study indicate that students' behavior of attendance is affected by teacher introduction of a stated attendance policy.

REACTION: The study supports the premise that teachers can influence student behavior. This finding raises the question of whether the implementation of a more drastic attendance policy would result in a long-term trend toward increased student presence in the secondary school setting.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1990

Jerry Wellik, Chairperson

THE EFFECT OF SILENT READING AND SELF-CHARTING ON READING RATES OF SECONDARY SCHOOL SPECIAL EDUCATION STUDENTS

Jon S. Stern

The ability to read fluently is becoming increasingly more important as our society becomes more complex and industrialized. Two methods used to increase fluency in readers are sustained silent reading and self-charting. The use of self-charting is based on metacognition and designed to reinstate control of reading progress back to the individual.

A review of the literature revealed that the use of these two methods had produced favorable results in a variety of age levels as far as increasing the reading fluency and comprehension of the readers. It was further noted that these two methods could be individualized to the requirements of the implementor's classroom.

The study conducted by this author examined the effect of silent reading and self-charting on oral reading rates. The study was conducted over a ten-week period and included special education students in tenth through twelfth grades who had reading as an IEP objective.

The teachers conducting the one minute probes for the study were trained in the data collection process to assure uniformity.

FINDINGS: The two variables of sustained silent reading and self-charting did cause an effect on oral reading rates. The eleven subjects all increased their mean oral reading rates after the implementation of self-charting as compared to the baselining period. The implementation of sustained silent reading also produced a mean oral reading rate increase in fifteen out of twenty-two conditions. Silent reading rate also increased as measured by the Stanford Diagnostic Reading Test for all eleven subjects.

Reading comprehension increased for nine of the eleven subjects as measured by comparing the pre- and post-test results of the Stanford Diagnostic Reading Test. The limitations of this study prevent a clear correlation from being determined concerning whether the improvement in reading comprehension was directly a result of the two implemented variables.

The recommendation based on these conclusions is that sustained silent reading and self-charting can be valuable components in the reading instruction program.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1990

Jerry Wellik, Chairperson

EVALUATING READING AND BEHAVIOR SCORES OF MILDLY HANDICAPPED STUDENTS THROUGH THE USE OF REINFORCERS

Darlene Holdvogt Strand

The purpose of this study was to evaluate reading and behavior scores of five mildly handicapped students given monetary, edible, and social reinforcers only. Students received in a random order, ten reading lessons under each reinforcer. The daily reading scores were tabulated after each lesson by the author and the reinforcer immediately followed the tabulation. The behavior score was determined by an aide using a six-second probe during each daily reading lesson.

The author addressed two questions for each of the five students: (a) under which reinforcer did each subject score the highest in reading, and (b) under which reinforcer did each student obtain the highest on-task behavior score?

The results of the study show that all subjects responded favorably to the reinforcers although the amount of variation between the reading and behavior scores was minimal for the majority of the students. No definite pattern was established in determining which reinforcer was the most powerful.

The author suggests that the use of reinforcers be continued in elementary classrooms but that future studies run longer and that the reinforcers be made more powerful. The author also recommends that reinforcers be continued due to the positive comments from the students.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1989

Joan Bigler, Chairperson

THE CORRELATION BETWEEN EARLY CHILDHOOD SPECIAL EDUCATION PLACEMENT AND SUBSEQUENT SPECIAL EDUCATION PLACEMENT IN THE EARLY GRADES

Susan M. Tohal

This study examined the school careers (kindergarten through 4th grade) of children who qualified for and attended Early Childhood Special Education classes in a central Minnesota community. What percentage of previous Early Childhood Special Education students are admitted into special education programs and for how many years? If they are placed into the mainstream without support services, how do they function?

This study involved collecting data from school cumulative files from the years 1978 through 1989. Eighty-three names were generated from class lists. There were 73 subjects with information. Data were collected on each student up to the fourth grade. The following information was collected: a) exit status, b) number of referrals, c) areas of special education service received, d) number of years in a special education program, and e) subjective information from the classroom teachers.

Of the 73 subjects studied, upon leaving Early Childhood Special Education, 14% were referred twice for special education services and 30% had been referred once. Eighteen percent of the subjects received Learning Disabilities services for one or more years, 4% received Mildly to Moderately Handicapped services, and 71% received one or more years of Speech and Language services. Three percent received Moderately to Severely Handicapped services.

Twenty-two of the subjects studied were referred for Learning Disabilities service and 13 qualified (59%). Four were referred for Mildly to Moderately Handicapped services and all qualified. Two were referred for Moderately to Severely Handicapped services and both qualified.

For those subjects who continued a special education service, the largest percentage was Speech and Language. Fifty-three percent continued with Speech and Language alone, while 12% continued with Speech and Language with Developmental Adapted Physical Education services, and 3% continued in Speech and Language with Hearing Impaired Services.

There is an obvious lack of extensive research on the long-term effects of Early Childhood Special Education and it is apparent that further research is needed to fully understand its purpose and efficacy. There are numerous changes occurring in the field of special education and more so in the area of Early Childhood Special Education. New criteria and regulations are continually being recommended and current and accurate studies are needed to aid in this process of change.

APPROVED BY RESEARCH COMMITTEE, MAY 1990
Eva Gadberry, Chairperson

IMPRESSIONS OF SPECIAL EDUCATION IN JAPAN BY A TEACHER OF HANDICAPPED LEARNERS FROM THE STATE OF MINNESOTA, U.S.A.

Margaret F. Whitcomb

PURPOSE: The purpose of this study was to investigate special education programs in Japan with reference to comparable programs in the state of Minnesota, U.S.A.

METHOD: The design was descriptive using site visits, review of the literature and interviewing techniques.

RESULTS: Although provisions are made for special education programs in Japanese public schools by the Ministry of Education, Science and Culture, no such programs were observed in Japan. Japanese teachers made only vague references to classes in some schools that would give education support in reading to students who were falling behind. Classes for the purpose of providing special education were not located in regular schools in Japan. Neither were students identified who would receive any part of special education in regular schools in Japan.

It was found that basic cultural philosophies have a strong influence in shaping the education process throughout Japan. The general intelligence of students is not considered to be of primary importance to achievement in school. Rather the emphasis for achieving in Japanese schools is placed on student effort and diligence. Individuals are not openly identified as having any differences in Japanese schools.

Japanese children are taught at a primary level that group participation is vital to sustained success. Small groups of students (*han*) work cooperatively together in their classes in all Japanese schools. A student's responsibility is reinforced by the group support to each individual within that group.

A major external influence on the success of the Japanese schools comes from the family. The entire family is in some way affected by their children's academic performance. Japanese mothers are recognized for the major role they play in the development of the sustained learning process of their children.

Private schools (*juku*) provide instruction to Japanese children beyond the regular school day. A high percentage of Japanese students attend *juku*. This school offers: 1) remedial instruction to students who are falling behind in their regular classes, 2) extended regular study to students who wish to study more, and 3) creative study for students who do not have that available to them in regular schools. The need for a student to receive special help in regular Japanese public schools is not openly accepted by teachers, students or parents.

The sort of special help a student receives from his mother, support learning group within the school, or private school tutoring are generally accepted methods of providing a type of special education to Japanese students.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1988
James Lewis, Chairperson

A PROFILE OF A CHILD WITH MYELOMENINGOCELE AND TREATED HYDROCEPHALUS: SIX CASE STUDIES

Debra C. Williamson

A review of research and six accompanying case studies suggest that children with myelomeningocele and accompanying hydrocephalus present a very complex, heterogeneous profile. Yet, certain trends do emerge upon closer examination and may serve to enlighten and assist the educator in meeting the needs of these children in the educational setting. Influencing factors include the pathological status of the brain and related neuropsychological implications, history of medical complications and resulting hospitalizations, personality, interpersonal relationships, and general activity level. All of these factors should be taken into account when attempting to identify appropriate learner expectations, instructional methods, materials, and curriculum modifications.

APPROVED BY RESEARCH COMMITTEE, MAY 1991

Sandra Reese, Chairperson

INTERACTION OPPORTUNITIES BETWEEN SEVERELY HANDICAPPED AND NONHANDICAPPED LEARNERS IN SCHOOL SETTINGS

Mollie J. Wise

The successful integration of severely handicapped students into neighborhood public schools requires judicious planning and preparation, the development of facilitative administrative policies, the organization and implementation of specific strategies to promote social interaction, and the systematic assessment of their impact. This field study investigated these issues in regard to the integration activities of the Adaptive Living Program (ALP), a special education setting serving 110 moderately to severely mentally handicapped students.

One hundred six respondents, including the Adaptive Living Program staff, regular class teachers, and administrative personnel in each of the three ALP sites completed the Severely Handicapped Integration Checklist, Belief Scale, and Behavioral Intentions Questionnaire.

An analysis of the information collected with the survey instruments indicated that the largest percentage of Adaptive Living Program students are integrated into regular school activities and environments at North Community School. The severely handicapped students at Westwood and Apollo do interact with their nonhandicapped peers, but in appreciably smaller numbers. Moreover, the majority of the survey respondents agreed philosophically with the practice of integration, although some disagreed with the expectation that regular class teachers should accept disabled learners in their classrooms. The least favorable opinions regarding specific integration strategies were voiced by the building administrators and the mainstream faculty at Apollo. The regular class teachers in each building expressed the strongest inclination to encourage their nonhandicapped students to interact with disabled peers during lunch in the school cafeteria, at the bus loading zone, and in the hallways.

Fifteen practical strategies to improve and increase the integration efforts of the Adaptive Living program were offered, given building differences in staff attitude and the varying needs, interests, and capabilities of the ALP students at each site. The recommendations included the development of building-specific checklists to annually assess the participation of ALP students in age-appropriate regular school environments and activities, a study of the feasibility of providing closer proximity to nondisabled students by interspersing ALP classrooms among regular classes at Westwood and Apollo, and the cooperative design of a unit for nonhandicapped students which would address individual differences and needs.

APPROVED BY RESEARCH COMMITTEE, NOVEMBER 1987

Sandra Reese, Chairperson

THE EFFECTS OF TEAM TEACHING ON WRITTEN LANGUAGE ACHIEVEMENT OF LEARNING DISABLED STUDENTS AND LOW-AVERAGE STUDENTS IN A HOMOGENEOUSLY GROUPED SETTING

Duane Sylvester Woeste

With the integration of the special education student and teacher into the regular education classroom, the education profession has had to deal with the enormous array of team teaching issues presently in schools today. This study focuses on the grouping and placement of the learning disabled student with their low-average peers in a team taught setting. Academically, the study addressed the written language achievement gains made over a five-month period.

Twenty-two sixth grade students participated in the procedure. Eleven were learning disabled and 11 were low-average. The Test of Written Language-2 (TOWL-2) assessed each child's written language level prior to and after the five-month period. A special education teacher and a regular education language arts teacher team taught the students. The curriculum covered was sentence skills and paragraph skills.

The results of the study reported significant differences in gains between the two groups in thematic maturity and style on the TOWL-2. All other subtests on the TOWL-2 reported no significant differences between the two groups.

APPROVED BY RESEARCH COMMITTEE, NOVEMBER 1991

James Lewis, Chairperson

A STUDY OF THE SPECIAL EDUCATION PROGRAMS OF A SMALL RURAL SCHOOL DISTRICT

Shelton E. Wright

The development of the special education programs of Pequot Lakes School District was traced. A historical perspective was developed of how and why the special needs services of the district changed and expanded.

Interviews were conducted with personnel who have worked with the past and present special education programs of the Pequot Lakes School District. School board minutes were also studied to provide information about the programs.

Increased concern for the education of the handicapped and the availability of funds for special education programs have resulted in the establishment and growth of the special education programs of the Pequot Lakes School District. Public Law 94-142 was instrumental in providing funds which enabled Pequot Lakes to expand its special education programs. Although Pequot Lakes administrators have utilized available funds to expand and develop special education programs for the Pequot Lakes School District, there are no programs in operation within the district that provide help for students who have been identified as emotional or behavioral disturbed.

Pequot Lakes' administrative staff need to evaluate its special education programs on a continual basis. Serious consideration needs to be given to the establishment of special education programs with integration at both the elementary and secondary levels. In-service programs need to be established and maintained to acquaint Pequot Lakes' education staff with the operation of the special education programs of the district.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1986

Sandra Reese, Chairperson

SENIOR HIGH EDUCATION

THE LEARNING AND TEACHING OF SPELLING AT THE SECONDARY LEVEL

Diane A. Lourey

Contrary to the view held by many early researchers, a review of the recent professional literature on spelling suggests that there is a logical structure to the English language. This literature further suggests that spelling ability is a developmental process which follows five stages and is not age-specific. The literature also gives insights into the choice of words to use when teaching spelling, effective methods for spelling instruction, the ineffectiveness of teaching isolated spelling rules, the relationship of spelling to writing, the evaluation of spelling progress, and the use of computers in spelling programs.

A study was conducted during spring quarter of the 1989-90 school year to determine: (1) is a limited amount of spelling instruction at the secondary level would have a significant impact on students' spelling achievement, and (2) if instruction in spelling rules would increase students' spelling scores. This study used two classes of high school juniors of 23 students each. The experimental group was given 30 minutes of spelling instruction per week, using a test-study-test method. This group of students was also instructed in two common spelling rules. Students were placed on a master word list at a level where they could accurately spell 50-75 percent of the words. Students self-corrected weekly tests and kept records of their individual errors in spelling logs. The control group received no direct spelling instruction.

The instrument used to assess the gain in spelling achievement was the spelling subtest of Comprehensive Test of Basic Skills (CTBS), published by Macmillan/McGraw Hill (1981). Identical tests were given as pretests and posttests. The t-test comparison shows a significant difference, $t(45) = 2.656$, $p < .05$, between the groups and indicates that the experimental group showed greater improvement than the control group. These results indicate that spelling achievement can be positively affected at the secondary level by giving it attention in the classroom.

Based on the analysis of the data, coupled with the review of the literature, the following recommendations are made: (1) spelling instruction initiated in elementary school should be continued for all students until they have reached either the correct spelling stage or their maximum developmental stage, regardless of their grade level; (2) teachers should be made aware of the current research on spelling; (3) school districts should develop individualized K-12 spelling programs, based on lists of commonly written words, including students' own reading and writing, and exclusive of spelling rules. These programs should be one component of the whole language program that includes intensive instruction and practice in actual writing.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1990

Lowell A. Mortrude, Chairperson

THE INFLUENCE OF NEWSPAPERS ON STUDENTS' KNOWLEDGE OF GLOBAL ISSUES

Maurice S. Meyer

PROBLEM: The purpose of this study was to investigate the relationship between newspaper reading and knowledge of global issues among high school students. Teachers report that students who are exposed to newspapers in the classroom improve in several scholastic areas as a result of that exposure. Global studies is becoming an educational priority, but little is known as to what the current level of student knowledge of global issues is, or how students acquire that knowledge. Can students acquire knowledge of global issues by reading newspapers outside the classroom? It was

hypothesized that students who read newspapers would know more about global issues than those who do not read newspapers.

PROCEDURE: Twenty-four ninth grade and 23 eleventh grade students at Albany High School were given a two-part survey. The first part of the survey asked the students to report on their newspaper reading habits. Students were to respond to questions about how often they read newspapers, what sections of the newspaper they read, and why they did so.

The second part of the survey quizzed students on their knowledge of global issues. The 16 questions that made up the quiz all dealt with the concept of global interdependence. This concept was emphasized because knowledge of it requires an understanding that goes beyond the trivial and superficial.

The two sections of the survey were then compared and analyzed in an effort to determine if a correlation existed between the frequency of newspaper reading and the results of the global issues quiz.

RESULTS: Of the students surveyed, most said they did not read a newspaper as often as five times a week. When the students read the newspaper, they most frequently read the comic section and the sports pages. By contrast, the international news section of the paper was one of the least frequently read sections of the paper.

In general the students did not do very well on the quiz of global issues. Because one question was an opinion question and another was one that did not allow for a correct answer, there were only 14 questions the students were scored on. The scores of the students ranged from two-to-eleven, with seven the most frequent score. Those students who reported they read a newspaper five-to-seven days a week had a mean score of 9.4 on the test of global issues. Those who read a newspaper one-to-four days a week had mean score of 7.2, while those who said they seldom or never read a newspaper had a mean score of 6.3.

Although a pattern emerged when comparing the frequency of newspaper reading with mean test scores, it was not statistically significant according to the chi-square test.

APPROVED BY RESEARCH COMMITTEE, APRIL 1991

Bruce Romanish, Chairperson

ART

TEACHER TRAINING REFORM: THE INCLUSION OF PROFESSIONAL RESPONSIBILITY IN ART TEACHER TRAINING PROGRAMS

Ruth E. Ebert

Teacher training reform has been suggested since the 1880's through the 1986 Carnegie and Holmes Reports with many in between. These studies suggest everything from higher qualifications for education graduates to restructuring the teaching force. However, none have pertained specifically to professional responsibilities within the art teaching profession.

A questionnaire was developed and mailed to three sample groups of art education graduates in an attempt to discover their educational background and attitudes about the presentation of certain professional topics of responsibility at the undergraduate level. In addition to a checklist regarding the graduates attitudes, yes or no questions were asked to identify if the subjects would have liked to learn more about that specific topic in their teacher training. The data were collected, analyzed, results presented and a summary with recommendations drawn.

In general, it was found that the majority of art education graduates from St. Cloud State University were displeased with the information presented on: being part of a union, negotiations, money available for grants, reporting

assault, injury, and abuse, and text selection, and would have liked more information on these from their College of Education.

The majority of University of Wisconsin-Milwaukee art education graduates were dissatisfied with and wanted more information on the following professional responsibilities: being part of a union, negotiations, substitute teaching, professional art organizations, parent conferences, money available for grants, emergency procedures, mainstreaming special education students, and text selection.

Over half of the sample of the art teacher organization were dissatisfied with ordering supplies, budgeting, and text selection and would have liked more information in their undergraduate education.

As a total, the majority of the population was dissatisfied with being part of a union, money available for grants and text selection. They felt these topics should have been covered more extensively in their art teacher preparation.

In this study, it was possible to compare those who wanted more information to those who were satisfied or dissatisfied with their undergraduate training on that specific topic. The tables illustrated the want for more information on these professional responsibilities from those who were satisfied as well as dissatisfied with their undergraduate training.

If the colleges of education are interested in improving their teacher training programs, it is necessary to become more fully aware of what the wants and needs are of past graduates in order to prepare future teachers.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1989

Lee Gutteter, Chairperson

CERAMIC INSTRUCTION AND MEASUREMENT IN THE ENGLISH LANGUAGE AND WITH SYMBOLS, FOR LIMITED ENGLISH PROFICIENT AND SPECIAL NEEDS STUDENTS

Russell F. Lindvall

PROBLEM: When students are exceptional or English is their second language and they register for an elective course in ceramics, the language and terms may be a problem for them. There is a noticeable need for a more inclusive method of teaching and testing to accommodate these students. It is the intention of this proposed curriculum to utilize symbols of a universal nature that students may learn.

PROCEDURE: The use of symbols will allow the English as a Second Language student and the exceptional student to concentrate on learning the methods in ceramics rather than the language. By using existing universal symbols and designing needed ones, the ceramic curriculum will become a picture storyboard for the special needs student. Representational, abstract and arbitrary symbols will be used when presenting information to students.

FINDINGS: All students were presented the ceramic information in the form of a booklet using written words and symbols. The entire curriculum was taught with the aid of symbols and at the appropriate times, students were checked for understanding. When the students were given the option to use either words and/or symbols to answer questions, many used both. Using symbols seemed an easier way to quickly convey a concept for some students. If a student lacked the vocabulary skills the symbols seemed an easy solution.

SUMMARY AND CONCLUSIONS: This project was intended for the use of my ceramic students of which many were identified as needing assistance in language skills. My solution for helping these students was to develop a symbol system for the ceramic curriculum. Allowing students to answer questions in the written form or with symbols helped solve their problem and eased their anxiety.

The use of symbols has simplified the way knowledge is learned for the exceptional student and the English as a Second Language/Limited English Proficient student.

The information gathered tends to support the hypothesis that students with a language barrier, whether reading, listening, writing or speaking, will be able to learn with the aid of symbols. They will be able to demonstrate their knowledge through a written visual symbols test.

APPROVED BY RESEARCH COMMITTEE, MAY 1990

Lee Gutteter, Chairperson

A STUDY OF HOW STUDENTS EDUCATED IN A SIX YEAR ELEMENTARY DISCIPLINED-BASED ART EDUCATION PROGRAM COMPARE TO STUDENTS INSTRUCTED BY CLASSROOM GENERALISTS

Carol Scott Wicklund

PROBLEM: The purpose of this study is to determine if students educated for six consecutive years in an elementary disciplined-based art education program would score significantly higher in cognitive knowledge, display better understanding in their preferences and judgements toward a work of art, and have better attitudes toward art than students who did not receive the same type of education.

PROCEDURE: Two hundred and ten seventh grade students from two different rural school districts were compared using a test that was developed to check for understanding, comprehension and attitudes in art. Of this total 105 students received a disciplined-based art education for six consecutive years and the other half did not. The test scores were analyzed for T probability on the cognitive knowledge parts and a percentage rating was used to score preferences, judgments and attitudes toward art.

FINDINGS:

1. The students educated for six consecutive years in a disciplined-based art education program scored significantly higher in cognitive knowledge.
2. The preferences toward and the judgment of art works in the experimental group were not significantly different from the control group.
3. The attitudes toward art in the experimental group were significantly different and more positive than the control group.

SUGGESTIONS FOR FURTHER STUDY:

1. Develop another test that would measure the experimental students cognitive knowledge at a higher level.
2. Revise and simplify the questions in the judgment and preference selection.
3. Add a third group to the study that has a DBAE curriculum taught by classroom generalists.

APPROVED BY RESEARCH COMMITTEE, NOVEMBER 1990

Lee J. Gutteter, Chairperson

ENGLISH

TOWARD A DESCRIPTION OF A BANTU AFRICAN RHETORICAL STRUCTURE: LUSOGA, A CASE STUDY

David M. Basena

Even though English as a second language (ESL) has been taught in Africa since the mid-nineteenth century, the "traditional" methods of instruction have ignored the student's first language (L1) background. Robert B. Kaplan (1966) proposed a theory of contrastive rhetoric that suggested that the differences between the rhetorical structures of the L1 and English cause interference in the process of writing in English. Adding to the literature on specific languages, this particular study attempts to "discover" the rhetorical pattern of the Bantu languages of Africa in order to suggest appropriate approaches to teaching of writing to students of this linguistic background.

Samples were selected and described for common features in rhetorical structures. The samples were grouped in three main categories: 1) texts written in Lusoga or in English by indigenous speakers of Lusoga (Lusoga is used as a case study); 2) essays written by indigenous "Bantu" speaking students from Uganda (one from Kenya); 3) folktales from Southern Africa, and passages taken from novels by an accomplished East African writer--Ngugi wa Thiong'o.

The results from the analysis support the hypotheses that: there is a strong element of indirection, digression and redundancy in Lusoga; and, the elements can be traced in the texts written by indigenous speakers of Bantu languages from other parts of the continent. However, some texts illustrate linearity similar to that expected in English expository prose. The occurrence of linearity is common in the essays of some students and predominant in texts written by educated people who have attained more than one degree from English medium universities. This implies that linearity can be learned through education and practice. But it could also mean that linearity occurs in Lusoga too, but it is not the "preferred" pattern.

The suggestions for the classroom propose starting from the student's rhetorical orientation. The teacher needs to identify the rhetorical orientation and make the student aware that there is a difference with the English linear pattern. Storytelling is a feasible approach to demonstrate that the same idea[s] could be presented differently in the L1 and the English expository prose. It should be emphasized that none of the rhetorical structures of the respective languages is necessarily better than the other.

APPROVED BY RESEARCH COMMITTEE, MAY 1991

James H. Robinson, Chairperson

THE EFFECT OF DRAMA IN LOWERING THE AFFECTIVE FILTER IN SECOND LANGUAGE ACQUISITION

Doug Blumhardt

This thesis proposes the use of modern American drama as a didactic tool to lower the affective filter for increased second language acquisition of specific cultural behaviors. The review of literature will cover the topics of the use of drama in the second language classroom, current theories of second language acquisition, the teaching of literature (and drama) in the ESL class, and finally, current methods of drama and theater use in the classroom.

Researchers have suggested that real life situations provide the student with a better environment for learning the second language than the classroom; however, students of second languages are not always able to immerse themselves in those real life situations. Therefore, drama can aid those students confined to the classroom in their acquisition of a second language. Recently many ESL/EFL instructors suggest that literature and drama be reintroduced

into the second language classroom for cultural and contextual purposes. Theater is an ideal educational tool; it reproduces in a vivid form what is already grasped or at least is graspable in life (Wilshire 4).

The main reasons researchers have argued for the use of drama are: (1) drama can aid in language development, (2) drama can make the classroom resemble more closely the real world, and (3) drama can affect the motivation factors involved in learning (McKay 530). Via suggested that play production is "goal oriented; language is 'real' instead of belonging to a textbook, and language is set in its appropriate cultural setting" (Magic 122).

The pilot proposes the use of a portion of a play within a second language teaching situation. The study is designed to allow ESL students to gain insight into a particular cultural behavior, eye contact, by participating as an actor in a play. Based on one of Richard Via's methods of using drama in the second language classroom, the first scene (the meeting sequence) of Edward Albee's play The Zoo Story was enacted by sixteen English as second language students studying at St. Cloud State University. The performance functioned as an advanced organizer for the discussion.

Drama can be a didactic instrument employed by the second language teacher as an informal, unassuming, enjoyable activity which can provide encouragement to the students to overcome psychological, sociological, and cultural barriers students may have.

APPROVED BY RESEARCH COMMITTEE, JUNE 1991

Sidney F. Parham, Chairperson

THE EFFECT OF ADULT-CHILD CONFERENCES ON THE INDEPENDENT READING OF EMH AND LD CHILDREN

Nona J. Carlson

PROBLEM: The purpose of this study was to examine the effectiveness of individual contract conferences on the independent reading of EMH and LD children. Two measures of independent reading were examined: the frequency of the books read and the reading level of the books read.

PROCEDURE: The subjects in this study were eleven elementary LD and EMH children in a resource room setting. Baseline data was collected on the amount of reading done by the students for six weeks. Individual conferences were then set up with each student for the purpose of establishing an individual contract. Each student had six more conferences over the next six weeks. At these conferences the books read were discussed and changes in the contract were agreed on. The teacher encouraged reading to continue, including appropriate level of books and any rewards were given. The results were recorded on the Individual Student Reading Record Sheets and compiled by the teacher.

RESULTS: Results of this study indicated that a program designed to increase the amount of independent reading was effective with a group of children in a special education resource room. Group data showed significant changes between the pre and post measures of the amount of independent reading. The number of children who actually improved the number of books read was six out of ten, indicating that individual data would not necessarily confirm the group results. The readability level of books selected after treatment also increased.

CONCLUSION: It was concluded that both variables were significantly affected. The total number of books read and the level of difficulty increased. The changes were statistically significant as indicated by the Wilcoxon Distribution Free Signed Rank Tests, supporting the conclusion that the technique used was successful for the students in the resource room setting.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1986

Floyd Ayers, Chairperson

INTERPRETIVE/INTERACTIVE RESPONSE TO STUDENT WRITING: A BIBLIOGRAPHIC SURVEY OF READER-RESPONSE LITERARY THEORY APPLIED TO STUDENT TEXTS

Tamara DeLand

Teaching writing has undergone dramatic changes in the past two decades, especially in the area of response to student texts. Foremost among these has been the process theory of composition, launched in part by the 1966 Dartmouth Conference of English teachers and scholars and by Janet Emig's landmark study of twelfth graders in 1971. However, while most composition teachers today will admit to the merit of process orientation in theory, 1991 often finds them still teaching and responding to writing in product-centered classrooms.

A second influential change in recent composition research is that of applied reader-response literary theory, which acknowledges that readers help make meaning within a given text. Used in conjunction with process theory, reader-response theory provides writing teachers and their students with an ideal opportunity to "bridge the gap" between composition and literature and provides for a more interactive "interpretive community" within the writing classroom. "Interpretive/Interactive Response to Student Writing" is a bibliographic survey focusing on these response issues, aimed at writing teachers at the secondary and college levels.

Chapter One presents a historical context of the social and education movements that were formative in constructing interpretive response theories, and it also names leaders in the interpretive response field, summarizing their philosophies.

Chapter Two is a survey and discussion of the current literature and research in the composition field, focusing on response to student writing. It suggests the adoption of interpretive/interactive response as a useful teaching and learning model.

Chapter Three provides applications for the interpretive/interactive classroom. It notes the complexities involved with applying this teaching and response method, especially in light of deeply ingrained teacher and student roles and recent "accountability" movements. The idea of the interpretive community is explored, as well as assorted ways to achieve it. Also included in Chapter Three are the unique problems of assessment in an interpretive/interactive classroom.

Difficulties in evaluation, accountability, grading, and testing are reviewed. Possible solutions are also examined. Finally, conclusions are drawn regarding the outlook for the future of interpretive/interactive response in the composition classroom.

APPROVED BY RESEARCH COMMITTEE, MAY 1991

Philip Keith, Chairperson

RECURRING CHRISTIAN THEMES IN THE FANTASY STORIES OF GEORGE MACDONALD

Diane M. Doebler

After an introduction which places George MacDonald in a historical context and discusses the influences of religion, family, and German romanticism on his works, the thesis is divided into a discussion of four recurring themes: the doctrine of becoming, good from evil, faith through loss of self, and death as rebirth.

The doctrine of becoming reflects MacDonald's belief that mankind's spiritual development is constantly changing. Like the characters in the stories, man is either growing better or worse. His adult fantasies, *Phantastes* and *Lilith*, portray this theme as a spiritual growth within the main characters, while his children's tales, particularly *The Princess and Curdie*, show it as a physical change. In them the characters grow into either beasts or royalty.

The second theme, good from evil, parallels the first but differs in its concept of evil. Evil is now defined as the adverse circumstances one faces and must successfully overcome if one is to believe in a benevolent God. Greatly influenced by the deaths of loved ones, poverty, and personal illness, MacDonald wrote knowingly about such

difficulties. Phantastes, Lilith, and At the Back of the North Wind are primary sources which demonstrate his belief "that in everything God works for good."

Another common theme in MacDonald's works, faith through loss of self, concentrates on his belief that one must lose the skepticism of maturity and regain a childlike trust. A number of MacDonald's characters, Irene in The Princess and the Goblin, Anodos in Phantastes, and Vane in Lilith, must physically lose themselves in unknown places to develop their faith.

Finally, death as rebirth reflects the basic Christian belief that man will be born again after death. Several children's stories and the adult fantasies include this theme, but the death of Diamond in At the Back of the North Wind is one of the strongest examples of this theme in MacDonald's works.

Although all four themes differ from one another, they are closely related in the message MacDonald attempts to convey to his readers: the spiritual life of an individual is not static, rather it progresses or regresses in reaction to the experiences of life and one's ability to trust in God with the innocence of a child.

APPROVED BY RESEARCH COMMITTEE, DECEMBER 1988

Steven Klepetar, Chairperson

COMMON GROUND: A DISCUSSION OF AMERICAN INDIAN LITERATURE AND WRITING INSTRUCTION IN THE PUBLIC SCHOOL CLASSROOM

Thomas K. Garvey

In the past decade, educational researchers such as John Goodlad (A Place Called School), Bill Honig (Last Chance for Our Schools), and Frank Smith (Insult to Intelligence) produced evidence of a failing American educational system. Notwithstanding the philosophical differences in their conclusions, one general theme emerges regarding a pragmatic procedure for implementing reform, and that theme focuses on creative reading and writing opportunities designed to promote real learning.

My research focuses mainly on the relationships between American Indian literature, writing instruction, and learning opportunities provided to students. The plan includes a traditional curriculum in reading and writing and nontraditional instruction modeled after Indian instructional methods and philosophy. In many ways, this blend of traditional and nontraditional instruction addresses the kinds of learning that educational researchers like Goodlad, Honig, and Smith find lacking in the public school language arts setting, especially in the areas of cognitive and personal development.

Indian literature, by its nature, provides opportunities for increased awareness through the study of other peoples and cultures. Writing instruction complements that empathetic awareness by involving students in writing that increases their self-awareness and self-understanding.

As students are introduced to the reading and writing in this curriculum, they will become more aware of their perceptions of others and themselves. The reading materials introduce the learners to the idea of culture and community. As students discuss and write about those and related ideas, they learn not only about the significance of Indian culture to Indian people but also about the significance of culture in all communities. As a result, students are encouraged to search for identity within their own cultures and to examine their relationships to the newly emerging world culture of the twenty-first century.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1990

Donna Gorrell, Chairperson

A CENTURY OF FLATLANDS

Lila M. Harper

This thesis looks at four books concerned with the theme of life in a two-dimensional world and its analogical use in developing an understanding of higher dimensions. The four books examined are Edwin Abbott's Flatland (1884), Charles Hinton's An Episode of Flatland (1907), Dionys Burger's Sphereland (1956) and A. K. Dewdney's Planiverse (1984). These books show the changes in the treatment of a theme over the course of a century, reflecting the concerns of the period in which each book was written.

To better understand the goals of this unusual interdisciplinary literature which is able to unite concerns of both society and mathematics, the history of the development of non-Euclidean geometry, n -dimensional geometry and mathematical philosophy are discussed. In addition, the paper discusses the nature of science fiction, Abbott's background, and the publication history of the book.

The paper examines interrelationships between Abbott's work, treatment of women and class distinctions in Victorian England and the Victorian crisis of faith. The physical world of Flatland is discussed and its social structure. It is found that euphemistic language is used in Flatland society to manipulate thought in a manner similar to that in George Orwell's 1984.

Abbott's physical world is then compared to that of the later books. Hinton's land was very different from Abbott's, and its physical laws were more logical, although characterization and plot were weak. Burger tried to incorporate Abbott's and Hinton's world but was more interested in the problem of two-dimensional life than in writing a believable story. Dewdney used Hinton's model, but, in spirit, his work is closer to Abbott's. Dewdney extrapolated the physical laws into biology, chemistry, and the applied sciences.

The emphasis of Abbott's theme of understanding an unknown dimension is changed in later books. Abbott was proposing a nonmystical explanation for the spiritual faith; he viewed it as an extrinsic force. Hinton's interpretation was that a higher dimension would be something intrinsic to the individual, an unrecognized part of human potential. For Burger, reacting to the technology of the 1950s, higher dimensions was a concept that modern man must understand. Dewdney's higher dimensions have lost their semantic connotations of higher consciousness; in Planiverse, development of spirituality is separate from the coordinates of a universe.

APPROVED BY RESEARCH COMMITTEE, FEBRUARY 1987

Wayne Tosh, Chairperson

HARLAN ELLISON: KING OF KILIMANJARO

Pamela A. Kalar

Harlan J. Ellison is the most lauded and most iconoclastic science fiction writer of contemporary times. He is a respected author in many genres and built a career on non-conformity. First published in the 1950s, Ellison did not achieve notoriety until the New Wave in science fiction came to America. Fame came in the form of Dangerous Visions, an anthology which he edited.

Ellison's writing in the 1960s is a perfect example of the New Wave. This revolution called for more use of literary conventions in science fiction.

"I Have No Mouth, And I Must Scream" and "Pretty Maggie Moneyeyes" are examples of stories in which machines have literally swallowed people. In an egomaniacal State man only succeeds in losing the Self.

"Repent Harlequin! Said The Ticktockman" is a story about social regimentation: militarized labor forces, mass consumption, totalitarian rule and preoccupation with time. All are characteristics of Western society that are the enemies of humanity.

"Croatoan" and "Shattered Like A Glass Goblin" deal with the obsessive nature of society. In these two stories Ellison directs his anger against addictions which prevent men from living natural, uncluttered lives.

"Shatterday" and "Jeffy is Five" are examples of Ellison's use of the double. "Shatterday" deals with the Self confronting the Shadow, and "Jeffy" is about the death of innocence.

"A Boy and His Dog" is Ellison's finest story. It is a strong condemnation of regressive elements in today's society, and presents a grim future if this regression is allowed to dominate.

Ellison is more than a gifted writer, he is a trenchant critic of Western society. He does not want to see the world destroyed, but wants to see it rebuilt on behalf of humankind. He shouts in his fiction to gain the attention of those who are capable of helping in the reconstruction--the individuals.

APPROVED BY THE RESEARCH COMMITTEE, MAY 1991

Armand Falk, Chairperson

WRITING CENTERS AND CONTENT-AREA COURSES

Mary L. Killmer

"Writing Centers And Content-Area Courses" examines the relationship among writing, thinking, and learning. It then suggests guidelines and strategies for developing a content-area writing center to support instructors and students as writing is used to further learning in all courses across the curriculum.

Chapter I investigates the relationship between writing and learning to establish the premise that cognitive skills can be developed through writing. In establishing this premise, the chapter relies upon the research of scholars such as Piaget, Vygotsky, Emig, Moffett, Britton, and Berthoff.

Chapter II defines writing center philosophy in relation to the theory that cognitive learning skills are reinforced through writing. Furthermore, the chapter describes writing center models which are appropriate for the writing as learning concept defined by current research. The chapter includes William Perry's research on levels of intellectual development.

Chapter III demonstrates how writing center directors can assist content-area instructors as they use writing assignments to focus their teaching goals. Content-area instructors are those instructors who teach a subject other than composition; nevertheless, they may use writing assignments as a learning tool because research supports assignments that teach learning through writing. Guidelines are given for writing center directors who want to open their writing centers to instructors and students in content-area courses.

Chapter IV provides two examples of workshops that writing center directors can offer to content-area faculty members: 1) how to focus assignments towards cognitive learning skills and 2) how to incorporate journal writing to

further cognitive learning processes. Additionally, workshops might offer instructors strategies for using writing center support services themselves.

Chapter V focuses on tutors. As part of a writing center practicum, tutors might study the relationship between cognitive learning skills and writing. In addition, tutors might complete the Meyers-Briggs Personality Type Indicator and learn how different personality types affect writing behaviors.

The Appendix contains some model designs for writing center use: a workshop notice; questionnaires about content-area courses for instructor and tutor usage; a thank you letter for instructors who support the writing center by sending their students for writing assistance; writing center evaluation forms for both instructors and students; key words for writing assignments; and a tutor's reaction to the Meyers-Briggs Personality Type Indicator.

APPROVED BY RESEARCH COMMITTEE, MAY 1987

Judith Kilborn, Chairperson

A LOOK AT KEN MACRODIE'S THIRD WAY FOR TODAY'S CREATIVE PROSE

Eleanor Hopper Kohner

The work of Ken Macrodie has had impact on the teaching of composition. The purpose of this paper is to survey his works and report on some critiques and applications of his Third Way that I have found for use in my teaching experience. This paper discusses Melvin Miller's five dimensions of creative prose writing--mind, honesty, simplicity, memorability, and inspiration--and applies them to Ken Macrodie's Third Way which I have broken into six basic concepts: (1) students should be taught to write with Truth and Honesty; (2) students should be assigned free writing exercises; (3) students should write about things that count for them; (4) students use the Helping Circle to help themselves and others; (5) students have their better writing publicized in some way; (6) students should use the I-Search process for researching topics.

It also integrates other reactions to the Third Way. The reactions are divided into three groups: those who praise the Way and show its value; those who criticize the Way; and those who like the Way but criticize parts. The main issue is the ability to take the Third Way and transfer it to impersonal, more complex forms of writing. The last part looks at some of the educators and what they have done to modify the Third Way to fit their personal needs. A comprehensive bibliography is included.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1987

Phillip Keith, Chairperson

JON HASSLER: A CATHOLIC SENSITIVITY

Joyce K. Moran

This thesis is intended to make a general presentation of the novels of Jon Hassler and explore the influence of Catholicism as it affects character and theme. Of real concern to a systematic study of Hassler's novels is to see that his fictional world is revealed through religion, specifically through a Catholic sensitivity toward man, setting, and the search for purpose and order. The spiritual dimension must be considered before one can understand Hassler's fiction.

Hassler's novels are novels of the human conscience at work. Each of his major characters is burdened by a conscience that restricts some actions and demands others. Those actions and decisions carry a moral implication that cannot be separated from a Catholic/Christian concept that man is on earth to imitate Christ.

Comfort and consolation and ease in religion are not the goals in life for Hassler's characters. The goal is suffering in some form and then extracting what meaning one can from that experience of suffering. Often that meaning comes in the form of a move from self-awareness toward an awareness of others and an awareness of responsibility toward others. Hassler's novels put things in perspective. Those things that are important have a way of coming into focus. Those things that are not important fade into the background. If the problems his characters face do not seem fundamentally spiritual, a closer look at the man-to-man relationships shows that these are really man-to-God relations. This is the only connection that is important.

Hassler's appeal as a novelist does not depend on our acceptance of the Catholic faith. It does depend, though, on our willingness to make a judgment, and the standards of judgment are always spiritual. Readers who are not Catholic should be able to see the force of Catholicism at work both outwardly through images and symbols and inwardly through actions taken by the major characters. Heaven and earth are connected in his fiction through this Catholic sensitivity and commitment to his faith.

APPROVED BY RESEARCH COMMITTEE, MAY 1987

Armand Falk, Chairperson

THE IMPORTANCE OF LISTENING IN ONE-TO-ONE WRITING INSTRUCTION

Karen L. Morris

"The Importance of Listening in One-to-One Writing Instruction" examines the importance of the listening role in one-to-one composition teaching in the context of a writing center. It reviews the literature on the listening role in writing center and speech communication research. It then examines three actual tutorials to determine the use of the listening role and the kinds of listening that occurred.

Chapter I outlines problems with teaching writing in the classroom, some difficulties in conference teaching with classroom teachers, and the advantages of one-to-one teaching, especially in a writing center staffed with peer tutors. The importance of tutor-student dialogue is then discussed as well as three common types of conferences: tutor-centered, collaborative, and student-centered. Finally, the roles that tutors play are explained and the importance of the listener role is introduced.

Chapter II discusses the foundations of the listener role in the context of the field of speech communication, including the components and types of listening and the importance of listening in communication. Empathic listening is one important type used by tutors; interpretive and comprehensive listening are also often used in the tutorial. Techniques of active listening and the types, function, and importance of feedback are also explained.

Chapter III focuses on listening within the context of the tutorial, drawing on writing center research. The importance and uses of listening in different stages of the tutorial are discussed, including setting the stage and establishing rapport, diagnosing the problem, working on the problem, and summing up the session. The differences between listening to written comments and directly to a person--student or instructor--are explained.

Chapter IV examines three videotaped tutorial sessions at St. Cloud State University. The ways tutors use the listening role and the kinds of listening that occur are discussed. Three tables are included that detail the number and kinds of non-verbal communications, verbalizations other than questions, and types of questions.

Chapter V reviews the place of listening in research and outlines some areas for further study. This chapter also suggests some techniques for training peer tutors to be effective listeners.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1988

Judith Kilborn, Chairperson

BLAKE'S QUEST FOR UNITY IN THE FOUR ZOAS

Kathryn L. Naylor

After examining the cultural context of women's roles in Blake's time, including Wollstonecraft's A Vindication of the Rights of Women, this study looks at the criticism that focuses on the emanations' roles. There is an explanation of the Albion figure as the Fallen Man, Humanity, and Great Britain. The Four Zoas is a prophecy that describes the disintegration and restoration to unity of the four faculties or zoas that make up a human psyche.

Chapter Two is devoted to Enion, Tharmas's emanation. Tharmas is integrative perception so she should be unified perception. After the fall he is chaos and she is rigid perception. Neither of them comply with cultural expectations of gender specific behavior.

Chapter Three deals with Enitharmon, Los/Urthona's emanation. Since he is poetic power, she should be creative acts. In her fallen state she is unable to manifest her creative side and relies on her seductive powers to manipulate Los. They no longer function as agents of the imagination, they represent the limits of time and space.

Chapter Four explores Ahania's nature. She is the emanation of Urizen who is reason, so she should be ameliorative wisdom. However, in her fallen state she becomes too timid and passive to choose right action. Urizen casts her out in a fit of anger. Her passivity is not goodness, it is collusion with wickedness.

Chapter Five concerns Vala, Luvah/Orc's emanation. Luvah is energy or passion and Vala is emotional fulfillment. In the fallen world they both become perverted and degraded. Vala becomes the demon Goddess of a natural vegetative religion and demands sacrifice. Orc (Luvah's fallen name) becomes the uncontrollable fire of a revolution that becomes caught in a cycle of revolt, decadence, and tyranny.

Chapter Six defines the Hermaphrodite symbol as a deformed or amorphous, dehumanized figure who represents sterility and destruction. Therefore, war is hermaphroditic because it dehumanizes people. Finally, Blake was struggling with questions that ask how much of our identities is tied in with our genders and questions of male and female identity and sexuality in eternity. He uses the female emanations to demonstrate the full range of behavior possible in humans of either gender. Blake stressed that we need to draw on the strengths of both our male and female sides to achieve dynamic balance and integration.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1989

Steven Klepetar, Chairperson

THE LITERARY INFLUENCES OF LAUTREAMONT AND JARRY ON DADA-SURREALISM

Neil L. R. Tate

Motivated by disgust, despair, and revulsion for the bourgeois attitudes that lead to the hideous slaughter of World War I, Dada, according to Hans Richter, "was a storm that broke over the world of art as did war over the nations." Although the inception of Dada appears to be a reaction to World War I, two French writers, Comte de Lautreamont and Alfred Jarry, were instrumental in seeding the clouds that would eventually release a torrent of discontent in the expression of the Dada-Surrealist movement.

The Zurich Dada movement--as did the Paris, Berlin, and New York movements--attacked the sacred institutions of society: morality, religion, language, marriage, and the arts in total defiance of authority. The attacks on the foundations of society are mirrored in Lautreamont's The Chants of Maldoror and Alfred Jarry's King Ubu, two works that precede Dada and, subsequently, Surrealism by several decades.

Lautreamont's view of man's place in a malevolent cosmos in Maldoror, further elaborated in Jarry's theme of man as a marionette in Ubu, became a popular image for Dada-Surrealism as evidenced in the statement by Dadaist Richard Huelsenbeck that "We are all in the hands of an irrational structure." Furthermore, Lautreamont and Jarry influenced the Dada-Surrealist view, contrary to the ideals of civilization, that the universe is not governed by logic or order--but rather by chaos.

Finally, the literary legacies of Comte de Lautreamont and Alfred Jarry nearly perished with them, but the revival of their nihilism by the Dada-Surrealists, to renew the shock attack on bourgeois society, effectively, set the stage for the emergence of the modern theater.

APPROVED BY RESEARCH COMMITTEE, MAY 1987

Joseph M. Young, Chairperson

MUSIC

Carolyn Solmonson Norquist

FINDINGS: The worlds of choral and instrumental music have been in a state of transition throughout the whole twentieth century. The fundamental human need to express the artistic according to one's environment and understanding of the universe is one of the many factors which led to the twentieth century's so-called "new music."

The four Scandinavian countries of northern Europe did not evolve truly national styles in classical art music until the nineteenth century. A different viewpoint is expressed by Per-Anders Hellqvist. He believes that it is an international phenomenon that there are no isolated, purely national schools in European music (Roth 10). There is a need, however, to move away from national influences if new ideas are to be born. The question of whether or not there is, or has been, a unique "Nordic sound" is still open for exploration and discussion.

One of the most significant influences on Sweden's contributions to contemporary music is the national government support system of the arts. The Royal Swedish Academy of Music, founded by King Gustav III in 1771, had no immediate predecessor in any other country. . . (Hillestrom 17).

Because Sweden is a country with great distances and sparse populations, the modern media has been an important unifying element, as well as a teacher of the "new" international music language. New compositions by Swedish composers are commissioned every year; an independent school of music, the Radio Conservatory, was established in 1968 with Lars Edlund and Arne Mellnäs [two of the three major composers whose works are analyzed in this study] providing leadership and textbooks.

One of Lars Edlund's best-known compositions in the United States is the "Gloria." The text is based on the second section of the musical setting of the Mass, and the musical form is through-composed. [See score analysis.]

Ingvar Lidholm was one of two main lines of leadership for the new generation of Swedish composers during and after the 1960's. CANTO LXXXI [the work analyzed] appears in Lidholm's A Cappella Book.

. . . The pedagogical A Cappella Book . . . is based on a single 12-note series with tonal associations (to assist singers), but gradually a whole range of techniques is brought into play, culminating in the great CANTO LXXXI (Sadie, Vol. 10 827).

Arne Mellnäs' composition "Aglepta" is a three-part treble choir work based on a nineteenth century Swedish Troll proverb text of magic spells. Points of vocal entrance, duration, and repeats are freely created by the conductor. The choral singers are, at times, also free to choose individual pitches and pitch duration.

In several recent instances choral composers have also become composers of opera. For example, Edlund, Lidholm, and Mellnäs have all been contributing composers to Swedish Opera in the 1980's using Swedish literary and historical texts.

Henrik Karlsson observed that many small countries, such as Sweden, are experiencing concerns about the individual character and "vulnerability" of their national cultures:

[The term] "National identity" is again being used, not as an expression of chauvinism or national romanticism, but with the aim of enabling the musical cultures of each individual country to be maintained and developed. It is to be hoped that the Swedish efforts can constitute a step along the way (Roth 166).

APPROVED BY RESEARCH COMMITTEE, AUGUST 1990

Stephen Fuller, Chairperson

COMMUNICATION DISORDERS

DETERMINING THE PRACTICAL UTILITY OF THE CLINICAL EVALUATION OF LANGUAGE FUNCTIONS ELEMENTARY SCREENING TEST

Kimberly Mayer Chalmers

Speech-language pathologists are in need of a way to reliably identify early elementary age children who are in need of language services. A method is needed which goes beyond the established format of teacher and parent referral. One possible solution to aid in early identification of elementary children is through the administration of a language screening test.

The performance of 16 children enrolled in kindergarten through fourth grade on the Clinical Evaluation of Language Functions-Elementary Screening Test (CELF) was compared to their performance on a diagnostic battery of language measures consisting of the Test of Language Development, the Peabody Picture Vocabulary Test-Revised, and the Expressive One Word Picture Vocabulary Test. The CELF was found to have a limited practical utility in correctly identifying children with potential language deficits, but the results provided some relevant information about the children's language abilities.

APPROVED BY RESEARCH COMMITTEE, MAY 1991

Margery M. Whites, Chairperson

INCREASING INITIATION WITH AN AUGMENTATIVE COMMUNICATION SYSTEM

Jane B. Flanigan

As technological advances occur in the area of augmentative communication, there is evidence that existing intervention procedures lack considerations of language acquisition. An important component of language acquisition, according to social interaction theories, is the ability to initiate communicative interaction. Difficulty in facilitating initiation skills is compounded by factors associated with augmentative communication.

A nine year old child who uses a Prentke Romich Touch Talker was chosen as the subject. The subject was exposed to two separate intervention programs for a period of one week each. Treatment A, designed to control for the effect of an increase in therapy services, consisted of intervention such as that received in the subject's school program. Treatment B, the intervention procedure studied in this research, was a synthesis of models resulting in a holistic approach. Subject-initiated interactions with a peer were tallied by an adult who observed the treated and untreated play situations during four phases: baseline, after treatment A, after treatment B with a familiar peer, and after treatment B with an unfamiliar peer.

Though quantitative comparison showed no increase in initiation after treatment A, a marked increase after treatment B with both a familiar and unfamiliar peer was noted. The untreated play activity showed no change through the four observation phases.

The findings of this study indicated that administration of the intervention procedure produced an increase in subject-initiated communicative interactions. It is recommended that additional studies include the observation of the effect of the intervention procedure with a variety of subjects, settings, and a longer duration of the treatment.

APPROVED BY RESEARCH COMMITTEE, MAY 1991

Joan Jacobson, Chairperson

COLLEGE OF SCIENCE AND TECHNOLOGY

BIOLOGICAL SCIENCES

ICHTHYOPLANKTON DRIFT IN THE MISSISSIPPI RIVER AT ST. CLOUD, MINNESOTA

Mitchell J. Albers

Ichthyoplankton drift samples from the Mississippi River at St. Cloud, Minnesota, were collected weekly between May 15 and July 16. Data acquired on the drift fauna, composition, magnitude, diel fluctuations and spatial distribution were statistically analyzed to provide a baseline of information on drift in this area. Deep water sampling gear was designed and used to permit sampling a cross section of the river.

Twenty-two taxa representing seven families were collected. The predominant taxa were Common carp Cyprinus carpio, Catostomidae, and Centrachidae in decreasing order of abundance. Peak drift densities ($81/100\text{m}^3$) occurred on May 15 when the predominant ichthyoplankters were carp yolk-sac larvae. The daily drift rates ranged from 40.0×10^6 to 1.06×10^4 . The average weekly drift rate of larvae moving through the sampling transect was approximately 4.69 million. Diel fluctuations showed a far greater number of larvae drifted during the night then during the day. The spatial distribution of drift shows that the surface waters of the river contain the greatest densities of larvae. Drift densities for selected taxa were rarely uniformly distributed in the river cross section.

APPROVED BY RESEARCH COMMITTEE, MAY 1988

Alfred J. Hopwood, Chairperson

BIOLOGY OF THE GREATER SANDHILL CRANES OF AGASSIZ NATIONAL WILDLIFE REFUGE, MARSHALL COUNTY, MINNESOTA

Jon J. (Jeff) DiMatteo

Greater sandhill cranes (*Grus canadensis tabida* Peters) nesting at Agassiz National Wildlife Refuge in northwestern Minnesota were studied from 20 April 1984 to 10 December 1985. Local birds were monitored to determine population size and age structure, reproductive success, habitat use, breeding territory characteristics, and migration routes and wintering grounds. Refuge use by spring and fall migrant cranes was also monitored. Forty-two pairs were identified. Thirty-six were breeding pairs and four were subadult pairs. Twenty nests were found; pairs at 13 of these hatched at least one young. Sixty-two flightless young (1.4 young/pair) were observed, and 42 of 47 (89.4%) young fledged. The majority of breeding pair observations were of birds in uplands, and 59.8% of all observations were of birds in croplands. Fifteen territories averaged 285.2 ha, including 58.5% wetlands and 41.5% uplands. Nest marshes averaged 73.2 ha. Fifteen local birds were color-marked, eight of which were radio-tagged and followed through parts of their migration. Unlike cranes nesting in east central Minnesota, these birds entered the Central Flyway. One bird was traced to east Texas wintering grounds.

APPROVED BY RESEARCH COMMITTEE, MAY 1991

Alfred H. Grewe, Jr., Chairperson

SURFACE SIALIC ACID CONTENT OF B LYMPHOCYTES VARIES WITH ACTIVATIONAL STATE

Teresa M. Foy

A considerable amount of the current research in immunology is dedicated to defining the pathways of maturation, activation, and differentiation of lymphocytes and the factors which contribute to these events. The significance, if any, of the sialic acid found on the surface of lymphocytes in these events is also of importance in defining these pathways. In an attempt to define the factors which contribute to the development of thymocyte immunocompetence, the sialic acid-specific lectin, lobster agglutinin 1 (LAg1), has been used to isolate a functionally immature population of T lymphocytes, based on their low levels of surface sialic acid.

In the current study, a subpopulation of B lymphocytes bearing high levels of surface sialic acid was isolated using LAg1. B lymphocytes, activated with the B cell mitogen lipopolysaccharide (LPS), and cultured for at least 48 hours, were isolated as LAg1+ cells. The number of LAg1+ cells increased with time in LPS-supplemented culture. None of the other B lymphocyte populations studied were LAg1+. The surface sialic acid content of B lymphocytes was determined by the thiobarbituric acid assay. Surface sialic acid content was shown to increase with the same kinetics as LAg1 agglutination.

It is possible that an increase in sialic acid levels of surface molecules results in an increased charge repulsion between T and B lymphocytes. This may represent a mechanism by which the B cell disengages from the T-helper cell upon completion of the helper functions. Another possible explanation for the increase in levels of surface sialic acid is the activation-induced sialylation of existing receptor proteins, or expression of newly formed sialylated proteins, responsible for migration and adhesion to the marginal zone of the spleen, where plasma cell differentiation occurs. A continual increase in the levels of surface sialic acid as a signal for senescence, is a third possible explanation for the results obtained in this study.

APPROVED BY RESEARCH COMMITTEE, MAY 1988

Janet Collins Woodard, Chairperson

IMMUNOLOGICAL SERUM COMPARISON: A METHOD FOR DETERMINATION OF TURKEY SUBSPECIES

Carole J. Hornby Gernes

Turkey sera samples of wild subspecies, game farm and domestic turkeys from Minnesota, Kansas, Wisconsin, New York, Texas, New Mexico, Colorado, and South Dakota were examined using Ouchterlony double diffusion and crossed immunoelectrophoresis. Ouchterlony immunodiffusion resulted in partial identity of Minnesota eastern and South Dakota Merriam's sera when antibody against South Dakota Merriam's sera was used. An extra line, equivalent to partial identity, was formed when comparing Kansas eastern and Texas Rio Grande sera, using antibody against Minnesota eastern sera. Ouchterlony double diffusion comparisons were used to determine the identity of unknown sera obtained from Minnesota and Kansas birds in areas where more than one subspecies had been introduced. The Minnesota unknowns appeared to be Merriam's/eastern subspecies hybrids and eastern turkeys. The Kansas unknowns seemed to be eastern/Rio Grande hybrids.

The subspecies similarity constants of pooled sera were determined after running the crossed immunoelectrophoresis using two different antibodies for each turkey serum sample. Unique subspecies specific proteins were not found in individual sera by using crossed immunoelectrophoresis. It may have been possible that the Ouchterlony partial identity of subspecies sera were due to tertiary protein structure differences caused by one or more different haptens on one or more analogous sera proteins. SDS two dimensional electrophoresis may successfully isolate differing haptens in the future in hopes of developing a field agglutination test for subspecies determination. It may be possible to develop an agglutination test by adding other turkey sera to subspecies specific antisera in order to precipitate cross-reacting antibodies.

APPROVED BY RESEARCH COMMITTEE, MAY 1988

John C. Cronn, Chairperson

GALLIC ACID DEGRADATION BY ERWINIA HERBICOLA AND PSEUDOMONAS SP., ISOLATED FROM THE RHIZOPANE OF SMOOTH SUMAC (RHUS GLABRA)

Mark C. Gernes

This study was initiated to investigate the role of gallic acid as an allelochemic in smooth sumac (Rhus glabra L.); by monitoring rhizoplane bacterial potential to degrade gallic acid. The relationship between rhizoplane bacteria and sumac releasing gallic acid was postulated to involve ferric iron, which was known to complex with gallic acid. Erwinia herbicola and Pseudomonas sp., isolated from a sumac rhizoplane, were demonstrated to degrade gallic acid in vitro. Degradation occurred with endogenous iron, though the addition of ferric iron stimulated the breakdown process. Degradation was present extracellularly and intracellularly. Assays included UV spectrophotometry and thin-layer chromatography (TLC). The active enzyme was isolated from E. herbicola, though kinetics and end products were not characterized. Attempts at propagating sumac from seed and from rhizome and stem tissue cultures were unsuccessful. The intent was to grow sumac plants in sterile cultures, then inoculate them with selected organisms to assess the production and degradation of gallic acid in vivo a sumac rhizome. This goal was not achieved. Based upon the evidence presented here, this would represent a logical next step for investigating the bacterial degradation of gallic acid, and its effect on iron uptake by sumac and associated bacteria.

APPROVED BY RESEARCH COMMITTEE, MAY 1988

John C. Cronn, Chairperson

MEDIA FOR THE ISOLATION OF LEGIONELLACEAE FROM AQUATIC ENVIRONMENTS

Mark R. Gundersen

Various isolation and identification techniques were compared to determine which were the most selective for eight Legionella sp. The techniques were direct fluorescent antibody staining, pretreatments with acid buffer (pH 2.2) and/or heat (50C for 30 min.) and modification of the plating medium using dyes (crystal violet and/or malachite green) or antibiotics (glycine, vancomycin, polymyxin B, and cycloheximide). Both qualitative and quantitative results were obtained.

For a qualitative determination or specific identification of Legionella sp. in an environmental sample, direct fluorescent antibody staining was useful if at least a million organisms/ml were present. Both methods of pretreatment were effective in reducing contaminants in environmental samples being plated, but they also could inhibit the more sensitive species of Legionellae. With media modification, it was found that antibiotics gave better results in decreasing the number of contaminants than the use of dyes or other methods tested. Cycloheximide markedly reduced the growth of fungal contaminants. The use of buffered charcoal yeast extract agar with alpha-ketoglutarate (BCYEA) plus 0.015 g/l of crystal violet showed variable amounts of reduction of bacterial and/or fungal contaminants, and it did not show a sufficient reduction of contaminants over plain BCYEA to suggest its use as a selective medium.

APPROVED BY RESEARCH COMMITTEE, FEBRUARY 1986

Gordon D. Schrank

A LIMNOLOGICAL DIAGNOSTIC STUDY OF GROVE LAKE, POPE COUNTY, MN, IN 1986

Sandra Jean Munter-Holm

The Grove Lake Watershed is a 4,047 ha sub-watershed of the North Fork Crow River Watershed. Surface water runoff from the Grove Lake watershed flows into Grove Lake by three agricultural ditches and one stream. Grove Lake has a surface area of 152 ha, a volume of 4,625,550 m³, a maximum depth of 9.4 m, a mean depth of 3 m, and a 3.2 km SW-NE fetch. The smaller embayed portion of the lake is entirely littoral, and supports a dense macrophyte growth.

Nineteen lake, twenty six stream and fourteen well water samples were collected from February to December of 1986. Quantitative determinations of the physical, chemical, and biological parameters of the samples were made. Stream flows were monitored.

Despite its shallow depth, Grove Lake stratified and remained so during the summer months. Oxygen depletion occurred in the stratified region, which indicated a possible internal phosphorus loading source. A total phosphorus budget for the 100 day stratified period indicated a sedimentary phosphorus retention of 471 kg. The annual total phosphorus budget indicated a 473 kg sedimentary phosphorus release.

In 1986, Grove Lake received an annual total input of 2.13×10^7 m³ of water and 2,442 kg of phosphorus. Judicial Ditch #1 contributed 48% and groundwater seepage contributed 19% of the annual hydrologic input. Judicial Ditch #1 contributed 60% (1,462 kg/year) of the annual phosphorus budget. It contributed the largest concentration of all nutrients, except nitrate/nitrite nitrogen, where it ranked second. The Private Ditch contributed 12% (288 kg/year) of the annual phosphorus budget and ranked second in nutrient contribution, except for total organic nitrogen and nitrate/nitrite nitrogen, where it ranked third and first respectively.

Total phosphorus loading was at a dangerous level. In order to achieve permissible loading rates and reduce eutrophication, total phosphorus would have to be reduced by 50%.

Growth conditions in Grove Lake and its inflows were phosphorus limited a majority of the time. Other growth limiting conditions were: nonalgal turbidity, water coloration, and an increased flushing rate of 3.17 times per year, which was due to higher than normal rainfall.

Based on the means total phosphorus (80 ug/l), chlorophyll *a* (13.2 ug/l), and Secchi Disk transparency (1.6m), Grove Lake was classified as eutrophic. Another indicator of deteriorating water quality was the presence of blue-green algae.

APPROVED BY RESEARCH COMMITTEE, MARCH 1988

Keith M. Knutson, Chairperson

FOOD HABITS OF THE TIMBER WOLF IN VOYAGEURS NATIONAL PARK

James A. Schmidt

KEY WORDS: Timber wolf *Canis lupus* L., scat analysis, Voyageurs National Park, Minnesota, food habits, white-tailed deer, beaver, Kabetogama Peninsula, Cruiser Lake trail.

Food habits of the timber wolf in Voyageurs National Park, located in northern Minnesota, were investigated. Scats were collected along hiking trails and forest roads from January 1988 to August 1989. They were analyzed for prey species content at St. Cloud State University.

A total of 204 scats were analyzed and 243 food items were found. White-tailed deer was the main food source making up 69%. Beaver occurred in 17% while others made up the remaining diet. Beaver was a good supplement for the wolf and proved very important on Kabetogama Peninsula, especially along Cruiser Lake trail. Beaver comprised 57% of the diet in this area which made it the main food source. Voyageurs wolves are thriving and will continue to do so as long as the prey base holds steady.

APPROVED BY RESEARCH COMMITTEE, NOVEMBER 1990

Alfred H. Grewe, Jr., Chairperson

A PALEO-BISON SITE IN SHERBURNE COUNTY, MINNESOTA

James Victor Sporleder

In the process of constructing an irrigation reservoir in Sherburne County, a peat bog was found to contain hundreds of bison bones. Initial fossil finds in the fall of 1983 indicated that the site may be anthropologically significant as some of the fossil mandibles and metacarpals possessed striations which were identified as "butcher marks". The site has subsequently been researched during the summers of 1984 and 1985.

Eight test pits were dug within the confines of the bog in an effort to reveal undisturbed bison material. (All other fossil bison specimens collected had been removed from their original location during the excavation of the reservoir.) Five of eight test pits revealed bones in a continuous vertical range from 65 centimeters to 167 centimeters. All fossil bones found were randomly deposited in the peat.

Paleotopography of the bog indicates that the area was once the site of a large and swift moving river system. This is confirmed by the evidence of alluvial deposits that are found to compose all major topographic features within the research area, and by the size and external characteristics of material found below the peat/marl layers. The presence of marl indicates that lentic regions of water were located within the major lotic system. These regions are thought to be made in part by the construction of beaver dams as five of eight test pits revealed beaver damaged wood.

Pollen analysis indicates that the range in which bison bones are found is from 5,000 years B.P. to 10,000+ years B.P. Osteometric analysis of four fossil bison skulls reinforces the pollen dates as two separate species have been identified, *Bison bison* with subspecies *anthabasca* and *bison*, and *Bison antiquus*, subspecies *occidentalis*.

A four week anthropological investigation revealed inconclusive results. Although seven secondary flakes and one scraper stone were found, they could not be placed into any relational context with the fossil bison.

With the lack of any substantial human evidence in context with the fossil bison, the conclusion must be drawn that human interaction with the animals, if any, was fortuitous. These bison probably died upstream being swept into the stream current. Carcasses may have accumulated at beaver dams and decayed. Periodic flooding, such as spring run-off, may have destroyed the beaver dams and displaced the bison material downstream in a random fashion.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1986

Standley E. Lewis, Chairperson

MECHANISM OF REGULATION OF TRANSAMIDINASE BY GROWTH HORMONE AND CREATINE

Bingqing Zhang

Transaminidase is the first enzyme involved in the synthesis of creatine. Its activity is altered by growth hormone and creatine, the end product of the reaction.

In the present research, the mechanism of regulation of transaminidase by growth hormone and creatine in hypophysectomized rats was studied. Hypophysectomized rats were divided into four experimental groups: hypophysectomized control group, growth hormone treated group, creatine treated group and group with both growth hormone and creatine treatment. The kidneys from these animals were assayed for transaminidase activity. Results show that, compared to the control group, the enzyme activity is about six fold in growth hormone treated group, 50% in creatine treated group and almost the same in the group with both growth hormone and creatine treatment.

The RNA from kidneys of the same rats was isolated and studied to see the relation of changes of transaminidase activity and its mRNA level. The transaminidase mRNA levels were measured by Northern and dot blot analysis. Variation of transaminidase mRNA level was seen in the different experimental group. Results show that compared to the control group, the mRNA level of transaminidase is about four fold higher in growth treated group, 30% in creatine treated group and almost the same in the group with both growth hormone and creatine treatment. Therefore, the majority of the changes in enzyme activity can be accounted for by the changes of mRNA. This implies that the enzyme activity is primarily regulated at pretranslational level.

Finally, a pancreatic islet tumor cell line was established as a model system to study the regulation of transaminidase *in vitro*. Alpha and beta cell types were confirmed by immunohistochemical localization. After transaminidase producing cell type was confirmed in the cell culture, the transaminidase activity was measured in cells cultured in RPMI 1640 medium and in the same medium containing growth hormone or creatine. The transaminidase activity increased two fold in growth hormone treated cell and remained almost the same in creatine treated cells. This indicates that creatine may not regulate the transaminidase by directly affecting the cells, but the regulation of transaminidase by growth hormone is maintained in this cell line. Furthermore, this provides the first evidence of a direct growth hormone action on the pancreas cells to elicit a change in transaminidase activity.

APPROVED BY RESEARCH COMMITTEE, NOVEMBER 1990

Denise M. McGuire, Chairperson

INDUSTRIAL STUDIES

A DELPHI STUDY TO EVALUATE THE ABILITY OF TECHNOLOGY EDUCATION TO PROMOTE TECHNOLOGICAL LITERACY

Kurt Ralph Helgeson

This study was to develop a technology education course curriculum that would promote technological literacy. The curriculum, based on the Minnesota Plan for Industrial Technology Education (1984), was evaluated through the use of a Delphi study.

A review of the literature was conducted to identify the changing needs of society, new educational needs of society and identification of concepts of technological literacy. In addition, disciplines addressing technological literacy, methods of curriculum evaluation and expert with regard to technology education were identified through the literature review.

The curriculum evaluation was accomplished through a two round Delphi Study involving a panel of nine technology education teachers. Members of the panel were selected due to their involvement in the development of the Minnesota Plan for Industrial Technology Education (1984) and/or as an officer in the Minnesota Technology Education Association.

The evaluation of the curriculum indicated that the curriculum would promote technological literacy if implemented into a classroom. The mean of the evaluations were 3.90 for production, 3.78 for transportation, 3.91 for communication and 3.87 for energy/power using a five point Likert scale for the evaluation of each activity. The curriculum should be implemented into the educational setting for further evaluation in promoting technological literacy.

APPROVED BY RESEARCH COMMITTEE, FEBRUARY 1991

Anthony Gilberti, Chairperson

AN ECONOMIC ANALYSIS OF SELECTED ENERGY-EFFICIENT RESIDENTIAL FRAMING TECHNIQUES

Darin D. Kingston

This study compared four residential framing techniques for the purpose of determining their relative economic efficiencies. The comparison was made among the 2x4 stud wall, 2x6 stud wall, structural panel, and double wall framing techniques. Based on a common floor plan and characteristics of the geographical region of St. Cloud, Minnesota, the costs to build, heat and finance a structure were calculated when each of the selected framing techniques was used.

Part One of the study compared the current costs to build and heat the structure using each framing technique. Building costs were based on average square footage costs, material costs, estimated labor hours, and cost of carpenter labor per hour. The estimated annual heating costs were based on heat loss calculations and 1989 electricity prices. The 2x4 framing technique was found to have the lowest estimated building cost and highest estimated annual heating cost. Since the 2x6, structural panel and double wall techniques all had higher estimated building costs and lower estimated heating cost than the 2x4 technique, each was compared to the 2x4 technique to determine its relative payback period. It was estimated that the difference in current building and heating costs between the 2x4 and alternative techniques would be accounted for in four years, 22.9 years and 18.23 years respectively for the 2x6, structural panel and double wall techniques. Thus, it was determined that the 2x6 framing technique was the most economically appropriate alternative to the conventional 2x4 framing technique based on current building and heating costs.

The second part of this study compared the relative economic efficiencies of the selected framing techniques over a 30 year period. The total cost to finance each of the structures was calculated based on the estimated building costs

and the current rate for a 30 year conventional home mortgage. Electricity prices were projected for the 30 year period, based on historical price trends, and used to estimate the long-term heating costs associated with each framing technique. The 2x6 framing technique was determined to have the lowest total long-term costs and was thus determined to be the most economically appropriate for St. Cloud, Minnesota.

APPROVED BY RESEARCH COMMITTEE, MAY 1990

Andrew Horton, Chairperson

AN INDUSTRY SURVEY TO DETERMINE CAREER OPPORTUNITIES AND CURRICULAR REQUIREMENTS FOR BACCALAUREATE ELECTRONIC ENGINEERING TECHNOLOGY GRADUATES AT ST. CLOUD STATE UNIVERSITY

Donald E. Kolbert

PURPOSE: The purpose of this study was to: 1) identify career opportunities which are or will become available to baccalaureate electronic engineering technologists (BSEET's) in Minnesota, and 2) to identify the curricular requirements which will best prepare BSEET graduates for these career opportunities, as perceived by Minnesota employers surveyed during the summer of 1987.

PROCEDURE: A survey questionnaire was employed to identify the BSEET career opportunities and the curricular requirements.

The population consisted of 50 Minnesota employers who have employed, employ or were willing to consider employing graduates of a baccalaureate electronic engineering technology program. The survey questionnaire consisted of two parts: 1) a demographic section to gather employer data and employment opportunity information, and 2) a list of eight electronic courses with curricular topics. The employer respondent was asked to select whether each topic was necessary, helpful or unneeded. The data were collected, tabulated, reported in tabular form and reported in the thesis.

RESULTS: Thirty-five (70 percent) of the survey instruments were returned. All 35 employer respondents completed the demographic section of the survey. Thirty-one (62 percent) of the respondents completed the curricular section.

FINDINGS:

1. The surveyed employers reported a limited need for BSEET graduates at this time.
2. Only about half of the surveyed respondents participate in cooperative educational programs with academic institutions. This fact suggests an area where St. Cloud State University could become more involved through the offering of educational services and workshops for employers with in-house educational needs.
3. A BSEET curriculum is presented by the investigator which will meet employer and BSEET graduate needs as determined by the survey and which will comply with the national accreditation requirements specified by the Accreditation Board for Engineering and Technology (ABET).

APPROVED BY RESEARCH COMMITTEE, MAY 1988

William Lacroix, Chairperson

POLICIES OF, ACTIVITIES IN, AND BARRIERS TO RECYCLING PROGRAMS ON COLLEGE AND UNIVERSITY CAMPUSES IN THE STATE OF MINNESOTA

Brent Kelly Miller

This descriptive research study provides answers to eight basic research questions which were developed to identify and describe policies of, activities in, and barriers to recycling programs. The population of the study was all (59) two-year and four-year colleges and universities in Minnesota. However, three institutions were deleted from the original population because they leased office space exclusively and had no control over solid waste handling.

In review of literature, four methods of dealing with the solid waste dilemma are discussed. The first three methods are briefly discussed because of their pertinence to recycling. The fourth method, recycling, is discussed in detail so that readers can clearly understand the concepts and complexities of a recycling program.

Data were collected from the remaining 56 institutions through: a telephone interview with the most appropriate person--identified through an earlier telephone interview--and a mail questionnaire which was also sent to that key person.

Findings of this study indicated that:

- Only seven institutions have a written policy regarding recycling.
- More than 69 percent of the institutions are operating on previously existing budgets.
- Fewer than half of the institutions are doing any one of the communication activities which were identified.
- Securing money for capital investments was most highly rated as a barrier when instituting a recycling program.
- Accessibility to recycling bins and ease of use to the users were thought by the respondents as being very important to the success of a recycling program.
- Storage of recyclables, contamination of the recycling bins, educating the users of the recycling program, and finding time for administrative duties were rated as being the four most problematic issues facing program directors.
- Some recycling programs are more effectively removing recyclables from the waste stream.
- Increasing efforts to educate users of the recycling program and collection of more types of materials were the most frequently cited future expansion activities.
- The mean pounds of solid waste generated per person from 1989 to 1990 dropped 72 pounds.

APPROVED BY RESEARCH COMMITTEE, MAY 1991

William J. Lacroix, Chairperson

A NEEDS ASSESSMENT FOR A CONSTRUCTION MANAGEMENT PROGRAM AT ST. CLOUD STATE UNIVERSITY

Mark J. Yaeger

PROBLEM: A needs assessment for a construction management program at St. Cloud State University is the problem of this study. The study centers on the hypothesis that a construction management program is needed at St. Cloud State University, and that there is a demand for graduates of such a program to fill the needs of the regional construction industries.

METHODOLOGY: With the help of an advisory committee of ten selected contractors, a survey document was developed. The survey consisted of 14 general areas with 37 total categories. Each category was rated from one to five; one being the lowest in importance, five being the highest. The surveys were sent to 256 members of the St. Cloud Builders Exchange. The members were to respond to each category giving them a rating based on their experience. The results of the survey, after being compiled, gave a complete representation of which items should be given top priority for students, according to the regional construction industry.

ANALYSIS: Of the 50 total categories that are listed on the survey, only 11 did not meet the criteria to make them priority items. Of the 39 remaining categories, nine were given special consideration because the sample felt strongly about their importance.

COMPARISON: A comparison of the construction program within the industrial studies department and the areas of priority is made. The courses in which the material covered coincided with the priority items were to be part of a core for a construction management program of study.

RECOMMENDATIONS: The list of priority items that were not covered by existing courses were recommended as course additions. Some of the courses added would be: steel frame construction, blueprint reading and evaluating, building codes and standards and construction documents. With the addition of these courses and the use of current course offerings, a program of study can easily be developed.

APPROVED BY RESEARCH COMMITTEE, MARCH 1991

Anthony Schwaller, Chairperson

COLLEGE OF SOCIAL SCIENCES

CRIMINAL JUSTICE

BENEFITS AND LIABILITIES OF LICENSING POLYGRAPH EXAMINERS IN THE STATE OF MINNESOTA

Sherri K. Ahrens

PROBLEM: At this time, polygraph examiners are not required to have a license in the state of Minnesota. Any person in Minnesota can buy a polygraph instrument and can perform polygraph examinations with no schooling, training, or experience. This study looked at the benefits and liabilities of licensing polygraph examiners in the state of Minnesota.

PROCEDURE: A background and literature review was done on the development of the polygraph instrument and examination. The focal point of the literature review was on the reliability and validity of polygraph examinations. Written questionnaires were sent out to selected Minnesota criminal justice professionals to see what their opinion was on licensing of polygraph examiners in the state of Minnesota. A written questionnaire was also sent to the fifty states' Attorney Generals to see why states required different occupations to be licensed and why states did or did not require polygraph examiners to be licensed.

SUMMARY AND CONCLUSIONS: This study found that a majority of the Minnesota criminal justice professionals favored licensing of polygraph examiners in the state of Minnesota: 59 of 80 Minnesota district court judges favored licensure at 73.7%, 26 of 34 Minnesota county prosecuting attorneys favored at 76.5%, 132 of 143 Minnesota law enforcement (police chiefs and sheriffs) at 92.3% and nine of nine Minnesota polygraph examiners in favor at 100%. There was a large variety of reasons given for licensing of polygraph examiners including: "protection of the people," "minimum standards," "quality control" and "a code of ethics." There are many benefits and liabilities to consider when deciding whether polygraph examiners in the state of Minnesota should be required to have a state license in order to perform polygraph examinations.

APPROVED BY RESEARCH COMMITTEE, NOVEMBER 1988

F. Barry Schreiber, Chairperson

AN ATTITUDES SURVEY OF DEFENDANTS WHO HAVE ENLISTED THE SERVICES OF A PUBLIC DEFENDER IN STEARNS AND BENTON COUNTIES OF MINNESOTA IN 1986

Joseph E. Arvidson

PROBLEM: Many public defenders in this country have a very difficult task. They work under the burden of a very large caseload, which does not enable them to devote as much time and effort to each case as it may deserve. The public defender soon realizes that he is part of a working system, a system in which the public defender and the prosecutor are no longer adversaries, but allies. In many cases, the defendant is able to sense the breakdown in the adversary relationship. He feels reluctant to trust and fully cooperate with the public defender. As a result, the public defender is

not able to represent his client to the best of his ability. The lack of trust on the part of the defendant towards his public defender may indirectly impede the function of representation.

PROCEDURE: This researcher used a questionnaire to collect data. The questionnaire was sent to persons who had enlisted the services of a public defender in Stearns or Benton counties during 1986. Along with the questionnaire and a self-addressed stamped envelope, a cover letter was sent. The letter explained to the subjects that they were chosen to participate in a study of people who were represented by a public defender in central Minnesota. It assured them of complete confidentiality and instructed them not to put their name anywhere on the questionnaire.

SUMMARY: The typical defendant in this study was a white male, 19 to 23 years old, who made \$10,000 or less a year and has had no felony convictions in the last 20 years.

The defendants' perceptions of their public defender and his performance were critical. When the defendants were asked what their defense counsel was primarily concerned with 21 (55%) of the respondents believed it was "making things go smoothly for the court." When the subjects were asked "How satisfied were you with the outcome of this case?", 19 (50%) of them said they were either dissatisfied or very dissatisfied. Eighteen (49%) of the respondents agreed or strongly agreed with the statement: "My lawyer was more interested in getting my case processed than in looking out for my best interest."

CONCLUSIONS: The data seem to indicate that the defendant lacks trust in his lawyer. This lack of trust and cooperation may manifest itself in the form of poor representation. The data collected in this study appears to indicate that there may be a problem with the public defender system.

APPROVED BY RESEARCH COMMITTEE, MARCH 1988
Norman Kittel, Chairperson

AN ANALYSIS OF MINNESOTA'S LAW ENFORCEMENT POST-SECONDARY EDUCATIONAL REQUIREMENTS SINCE 1979: MINNESOTA'S QUEST FOR POLICE PROFESSIONALISM

Kenneth E. Dickinson

FINDINGS: The topic of police education has always been a controversial issue. This topic was chosen by this researcher to investigate the effects mandating pre-service, post-secondary education requirements have had on Minnesota law enforcement agencies since 1979. This thesis examines the perceptions licensed police officers have on the value of their education received through the three routes into law enforcement since 1979. It also looks into the perceived quality of education received through each respective institution, and comparative analyses are presented on these differences.

An historical overview is presented representing various schools of thought related to pre-service, post-secondary police officer education. In 1977, Minnesota's Legislature established the Minnesota Peace Officers Standards and Training Board (MPOST), the most comprehensive regulatory board of its kind, to license and re-license all Minnesota law enforcement officers, establish continuing education programs, training programs and control peace officer conduct issues. Since 1979, rules have been established by MPOST mandating pre-service, post-secondary education requirements be met by all entry-level police officers in Minnesota.

These rules require that a candidate interested in pursuing a law enforcement career attend an MPOST-approved course at an area vocational training institute, a two-year Community College, or a four-year University program. An MPOST written comprehensive examination is taken by the applicant, as well as an examination testing the skills of the applicant upon successful completion of an MPOST-approved skills course.

In order to study the effectiveness MPOST requirements have had on professionalizing Minnesota's law enforcement agencies, a questionnaire was developed to determine what perceptions a systematically-selected group of

police officers had relating to the mandatory education requirements. Three hundred thirty-seven questionnaires were distributed among this selected group of officers who were licensed as Minnesota full-time police officers from January 1, 1986 to November 30, 1988.

Two hundred fifty-six of the 337 officers returned their questionnaire, for a 76 percent response rate. A total of 94 percent of the respondents indicated they supported the concepts of MPOST, and 95 percent of the respondents indicated they felt they used their advance education levels, even though police work can sometimes be routine and boring.

Two out of three respondents (66 percent) indicated they would have received some type of pre-service post-secondary education before entering Minnesota law enforcement, even if it had not been mandated they do so before being licensed as peace officers in Minnesota.

The study indicates there are differences in the perceptions each group of respondents had pertaining to their pre-service education. The forty-one AVTI graduates rated their education received considerably higher than either of the other two education systems. The four-year university graduate seems to be dissatisfied with the quality of education received in the six areas of MPOST knowledge and learning objectives. All of the AVTI graduates felt they were prepared to take the MPOST Academic Examination because of the pre-service education they had received. All three routes seem to agree the skills taught to them at AVTI or at the three MPOST Skills Course Institutions, prepared them to take the MPOST Skills Examination. Generally, all respondents felt the quality of education received was quite adequate.

This study shows pre-service, post-secondary education requirements can be established on a state-to-state basis, without a state suffering from a lack of qualified candidates for law enforcement positions.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1989

F. B. Schreiber, Chairperson

PRACTITIONERS' PERSPECTIVES OF THE MINNESOTA SENTENCING GUIDELINES

Shelva Lee Johnson

The purpose of the study was to examine whether the Minnesota Sentencing Guidelines have had an effect on probation and parole agents. The study assesses the effects of the guidelines on the agents' perceived role and responsibilities by means of a self-administered questionnaire of 134 probation and parole agents throughout the state of Minnesota. The study examines changes in caseload management and supervision styles necessitated by the brevity of presumptive sentences and changes in the relationship between the agent and the offender.

Findings of the study include: the presentence investigator's role continues to be important to the sentencing decision; the Minnesota Sentencing Guidelines have had an important effect on Minnesota probation agents; Minnesota probation agents do experience some role conflict resulting from the implementation of the Sentencing Guidelines; one of the most important indicators of role conflict is the lack of a clear definition of the purpose of probation; and, analyses indicate some significant differences in probation agents' perspectives of the Guidelines.

The study concludes with some recommendations for greater clarification of the goals and objectives of probation in light of the Sentencing Guidelines.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1989

Richard Lawrence, Chairperson

THE RELATIONSHIP BETWEEN DSM III CHEMICAL ABUSE/DEPENDENCE DIAGNOSES IN INCARCERATED MINNESOTA FELONS CONVICTED OF CRIMES OF VIOLENCE TO PERSONS AND FOR CRIMES AGAINST PROPERTY

Steven J. Nordmann

PURPOSE: The purpose of this study was to assess the relationship in a population of convicted felony offenders serving time at MCF-SCL between their crimes against person and/or property and their self-report involvement (pre-conviction pattern) of chemical usage. Two null hypotheses were tested: 1) there is no correlation between chemical abuse/dependency and inmates' number of crimes, and 2) there is no correlation between personal versus property offenders in chemical abuse/dependency problems.

PROCEDURE: The data for this study were obtained during February and March, 1987, from Psychological Services Initial Reports on MCF-SCL inmates. The time frame of the reports utilized was MCF-SCL admissions from July 1, 1986 to December 31, 1986. The sampling frame was the roster of all first-time MCF-SCL inmate admissions sentenced from Minnesota courts during the preceding time frame, yielding a total of 190 completed files.

Only data from first-time MCF-SCL inmate admissions sentenced by Minnesota courts were utilized in this investigation. Inmate offenders initially screened out from this study included: 1) transfers to MCF-SCL from within the Minnesota corrections system, 2) Alaskan inmate transfers into MCF-SCL, 3) readmitted or repeat offenders to MCF-

SCL. Omission of the above (inmates initially screened out before imposition of the six month time frame) was based upon incomplete data documentation concerning chemical abuse/dependency.

The data were classified according to offender type: crimes against person versus crimes against property. The property offense group consisted of offenders serving time for theft/larceny, forgery/fraud, possession/receiving/transfer of stolen property, burglary, property damage, unauthorized use of a motor vehicle, arson, possession of burglary tools, possession/sale of drugs and escape from felony custody. The person offense group consisted of offenders incarcerated for rape/criminal sexual conduct, homicide, assault, robbery, felony possession of a weapon, kidnapping/false imprisonment, and terroristic threats. The cases where inmates were currently serving time for both a property offense(s) and person offense(s) were excluded from the multivariate analyses.

Person and property offenders were compared concerning the number of chemical abuse/dependency problems and the seriousness/degree of the problem. A measurement source which will be utilized is the Diagnostic and Statistical Manual for Mental Disorders III (DSM III) for quantifying inmate chemical abuse/dependency problems.

FINDINGS: The results of the study indicated that, for the former hypothesis, there was no statistically significant relationship between Crime (the cumulation of both Person and Property Offenders) and the Number of DSM III Classifications. In other words, knowing the inmates' number of chemical substance use disorders do not help to predict if an offender was serving time for one offense or multiple offenses.

For the latter hypothesis, Table 4.3 (a 2x5 contingency table of Type of Offenders by DSM III Chemical Substance Use Disorder Classifications), indicated there was no statistically significant relationship between Type of Offenders (either Person or Property) and DSM III Chemical Substance Use Disorder Classifications. Table 4.4 (a 2x2 contingency table of Type of Offenders by DSM III Chemical Substance Use Disorder Classifications), however, did show a statistically significant relationship between Type of Offenders (either Person or Property) and DSM III Chemical Substance Use Disorder Classifications.

APPROVED BY RESEARCH COMMITTEE, NOVEMBER 1987

F. B. Schreiber, Chairperson

DEVELOPING A FOUR YEAR BACCALAUREATE DEGREE PROGRAM FOR LAW ENFORCEMENT

Sundramoorthy Pathmanathan

The purpose of this study was to develop a four year baccalaureate degree program in law enforcement. After analyzing the criminal justice curricula of fifty-eight four-year universities and colleges in the continental United States and a comprehensive study on job task analysis of generalist police officers in the United States, the researcher recommended a total of twenty-four courses to be utilized when designing a four year baccalaureate degree in law enforcement.

APPROVED BY RESEARCH COMMITTEE, FEBRUARY 1989

Robert S. Prout, Chairperson

THE VIOLENT CRIMINAL APPREHENSION PROGRAM (VICAP) AND ITS APPLICATION TO SERIAL MURDER

Lyle D. Rust

PURPOSE: This study was conducted in order to describe both the problems law enforcement agencies have with serial murder and how the Federal Bureau of Investigation's Violent Criminal Apprehension Program (VICAP) can be utilized to counter these types of killers. An overview is given of the development of VICAP, which formally came into existence in 1985. Thereafter follows an analysis of the psychological motivations and behavioral traits exhibited by serial/sexual killers, and how these traits can be used by members of the FBI's Behavioral Science Unit to develop a Criminal Investigative Analysis (psychological profile) of these offenders. The data analysis of this thesis has been conducted to ascertain out how effectively the VICAP program has been made known to U.S. law enforcement agencies and how serious the problem of serial murder has been in the United States over the past six years (1982-1988).

PROCEDURE: Three hundred forty-four surveys on serial murder were sent to state, local and county law enforcement agencies in four states: California, New York, Florida and Texas. This was done to ascertain how aware law enforcement agencies (which had jurisdiction over a population of 50,000 or more) from those states were of the VICAP program. The survey also requested information from each agency on the number of VICAP Crime Analysis Reports filled out, the number of serial murder investigations, the number of serial murder suspects the agency apprehended or helped apprehend, average number of agencies coordinated with during serial murder investigations, and whether a Criminal Investigative Analysis was requested during these investigations.

CONCLUSIONS: Law enforcement agencies having jurisdiction over a population of 100,000 citizens or more are far more likely to be aware of the VICAP program, to be involved in more serial murder investigations and to assist in apprehending more suspects than law enforcement agencies with jurisdictions between 50,000-100,000 citizens. Of the four states surveyed, Florida has been involved in the most serial murder investigations per agency and has apprehended (or helped apprehend) the most serial murder suspects per agency.

APPROVED BY RESEARCH COMMITTEE, JANUARY 1989

Robert Prout, Chairperson

THE EVOLUTION OF YOUTH GANGS IN AMERICA AND THEIR IMPLICATIONS FOR MINNESOTA LAW ENFORCEMENT AGENCIES

Douglas E. Wagner

The purpose of this study was to analyze the contemporary urban youth gang's origin, evolution, and present manifestations so that law enforcement agencies may be better prepared for the future. Specific themes analyzed include gang formation, gang recruitment, gang hierarchies, criminal activities, and law enforcement responses. The purpose of this thesis is to enlighten the law enforcement administrator as to how the gang phenomenon was first noted in this country, how the criminal youth gang has changed over the years, and contemporary characteristics such as numbers and types of gangs, sizes of memberships, extent of criminal behaviors, and what impact they are having on the modern-day law enforcement agency.

Chapter One introduces the topic and describes the study's design and limitations. Chapter Two examines the existing literature in this area and analyzes it for its content and validity. Chapter Three tracks the evolution of youth gangs in America in regards to existence, characteristics, numbers, and types from their first noted recognition (circa 1820) to the present day. Chapter Four describes the modern-day criminal youth gang in terms of types, numbers, and criminal activities. Chapter Five examines the idiosyncrasies of being a gang member today. Chapter Six outlines current law enforcement responses to the gang phenomenon by large, medium and small-sized departments. Chapter Seven addresses possible future crime trends of the area gangs, the growth potential of these gangs and a future needs assessment for the Minneapolis-St. Paul area.

APPROVED BY RESEARCH COMMITTEE, MAY 1990

F. Barry Schreiber, Chairperson

REGULATIONS APPLYING TO THE OFF-DUTY EMPLOYMENT OF FULL-TIME PEACE OFFICERS IN MINNESOTA

Carol Ann Nelson Zeitler

An area that has initiated some controversy in the criminal justice system is that of the off-duty employment of the peace officer. That is, work performed outside of regular duty and sometimes referred to as "moonlighting."

Chapter Two is a compilation of selected cases where off-duty officers or departments have been subjected to litigation. The cases point out the various aspects of off-duty employment that could become legal issues. Some examples of the types of cases are: assault and battery, written permission, under color of state law, jurisdiction, and master and servant.

The results of the questionnaire clearly indicate that administrators wish to maintain control of officers. The primary concern is civil liability. A typical law enforcement agency responding to the survey was urban and had not been involved in litigation. The agency had policy developed by the department and off-duty employment was handled by the "officer" model, in other words, the individual officer contracts with an employer for a job.

The fourth chapter categorizes the contents of the fifty-three returned policies into eight broad sections: Regulation of Hours, Equipment, and Specific Jobs, Job Characteristics, Procedure for Obtaining Permission, Compensation, Approval/Disapproval, and Liability. The most regulated employment area was that work related to the sale or distribution of alcohol. The most regulated item of equipment was the official blue police uniform.

Appendix D consists of regulations included in the returned policies. The paper concludes with suggestions for a model policy and recommendations for future study.

APPROVED BY RESEARCH COMMITTEE, MAY 1989

Robert Prout, Chairperson

A COMPARISON OF LENGTH OF LIFE BETWEEN CAREER MALE ST. PAUL POLICE OFFICERS, COMPARISON GROUPS OF THE MALE UNITED STATES POPULATION AND COMPARISON GROUPS OF MALE MINNESOTA RESIDENTS, 1902-1981

Monti G. Zimmerman

PROBLEM: As a preliminary quantifiable test of the stress hypothesis among law enforcement officers, it is the purpose of this study to compare the age at death of all career male St. Paul police officers who retired from the St. Paul Police Department between 1906 and 1984 and subsequently died between 1934 and 1984 to: A) comparison groups drawn from the male population of the United States between 1902 and 1981, and B) comparison groups drawn from the male population of Minnesota between 1961 and 1981.

PROCEDURE: The sample used in this study consisted of the inclusive population of retired-deceased male St. Paul Police Department officers from 1906 through 1984.

Data for comparison groups for the male United States population are drawn from the United States life tables for the male population from 1902 through 1981. Data for comparison groups for the male Minnesota population are drawn from the Minnesota life tables for male residents from 1961 through 1981.

Because the life expectancy estimate is valid only for the year of birth, life table data were used in this study. Life table data report on expected remaining years of life for living persons in specific age categories in a specific year. For every St. Paul Police Department sample member who would fit a certain age category a matched counterpart in the same age category has been created in the comparison group. From these St. Paul Police Department individuals and matched United States and Minnesota counterparts, a comparison mean is drawn annually.

Using z-scores, this study examined differences between the retired-deceased male St. Paul Police Department officer sample and the life table comparison group data from the United States and Minnesota comparison groups in several different years at the .01 and .05 levels of statistical significance.

SUMMARY AND CONCLUSIONS: Analysis of the data revealed a statistically significant difference between the mean of the St. Paul Police Department sample age at death and the mean of the United States life table comparison group at several points during the time frame examined. The data revealed that in the year 1902 St. Paul police officers lived statistically significantly longer lives in comparison with the United States male population. In the years 1921, 1931, and 1941 the two populations lived approximately the same length of life. In the years 1961 and 1981 the United States male comparison groups and Minnesota comparison groups had significantly longer and increasingly longer lives compared to the St. Paul police officers.

The data support a difference between law enforcement officers' life span and that of the general population. Stress and stressors of the law enforcement occupation are suggested as one explanation of the findings, although other interpretations are possible.

APPROVED BY RESEARCH COMMITTEE, MAY 1987

F. Barry Schreiber, Chairperson

GEOGRAPHY

AN EVALUATION OF THE ADAPTION OF ASIAN STUDENTS IN THE ANOKA-HENNEPIN SCHOOLS

Gerald McIntyre

This study concentrates on a group of recent immigrants from Southeast Asia. The main focus is on the educational adjustment of the immigrant child. It is hypothesized that despite the cultural limitations, foreign born Asian/American students tend to adapt to the educational system of Anoka-Hennepin School District #11 as quickly as their American born counterparts. The body of students evaluated were those who immigrated to the Anoka-Hennepin district #11 from the countries of Vietnam, Kampuchea (formerly Cambodia), and Laos. The major focus of the study is on students in grades ten through twelve, as very little standardized testing is done on the elementary level.

Asians shows high enrollments in academic classes, particularly science and math. The Asian students in Anoka-Hennepin appear to be preparing themselves for science and math oriented fields in college.

A high percentage of all Asians were enrolled in the High Potential program. Nearly 6.99 percent of all Asians were identified as High Potential students, as compared to 3.86 percent of the general student population.

District #11 students were given the Comprehensive Test of Basic Skills in the 9th grade. Asian students did well on the reading portion of the CTBS test. The largest portion had scores in the upper half of the class (61 percent in 1983 and 81 percent in 1984).

The results were similar on the language portion of the test; Asian students scored higher on the math portion than they did on the other parts. In 1983, 75 percent of all Asian students scored above the average. In 1984, 95 percent scored above the 51st percentile.

A high percentage of all Asians took the Preliminary Scholastic Aptitude Test in 1986, indicating a desire to enroll in college. Their scores again were above average.

Asian students achieve well in their high school classes in Anoka-Hennepin. They had as a group a grade point average of 2.59 in 1985. This is above the general student population average of 2.27. Their honor point averages are high, when compared to other students. This is especially impressive when it is noted that these students are taking difficult classes. This supports the hypothesis that despite cultural limitations, foreign born Asian/American students are succeeding in Anoka-Hennepin schools.

APPROVED BY RESEARCH COMMITTEE, MAY 1987

Lewis Wixon, Chairperson

AN ANALYSIS OF ANOKA'S ETHNIC BASE 1850-1880

Douglas R. Sather

This study concentrated on the ethnicity of Anoka's early residents. The main focus was on the ethnic background of the single resident land-owners and where they settled within the city of Anoka. It was hypothesized that Anoka's early settlers were from the New England states and New York. The author used the Anoka City assessment rolls for 1860 and 1870, and compared them to the Federal Census to determine ethnicity and place of residence. The correlation between the 1880 Federal Census and the 1878 assessment was supplemented using the 1875 State Census.

Platted as a town in 1854, Anoka developed on both sides of the Rum River in a balanced pattern from the original plat to eleven new additions by 1878. Population growth was steady for the first three decades. Anoka's population went from 300 in 1857 to 602 by the first official census in 1860, with 72 percent of the single resident land owners from either New England or New York. Population increased to 1,497 by 1870, with 71 percent of the single resident land owners sampled from New England and New York.

The 1870s saw greater ethnic diversity, due in part to an increased intensity of logging and farming in the area. An ethnic infusion of Swedes, mainly in the Slaughter-Creighton Addition, along with the continued presence of Irish landowners in the Shaw Addition, gave the city greater ethnic diversity. The town's single resident land owners from New England and New York, however, had dropped to 50 percent by 1878. The hypothesis that most single resident land owners came from either New England or New York was thus supported.

APPROVED BY RESEARCH COMMITTEE, JUNE 1991

Henry Coppock, Chairperson

GERONTOLOGY

RURAL RESIDENCE PATTERNS AND THEIR EFFECT ON THE NEEDS OF THE ELDERLY

Jennifer M. Crotteau

Residence patterns have changed over the last twenty years, leading to a growing diversity among older people living in small rural communities. There are three identifiable subgroups among this population (newcomers, mixers and oldtimers). It was hypothesized that there are differences in the perceived needs and resources in the areas of housing, transportation and health care among the elderly in rural small communities. In order to examine the perception of needs and resources among these subgroups a two phase study was designed.

Phase I was a telephone interview designed to collect data on the 60 and older population in Smalltown, MN. Based on the data collected from the telephone interviews, the surveys were divided into three groups called newcomers, mixers and oldtimers. Each group was divided into three subgroups according to age (60-69, 70-79 and 80 and above. Because of the diversity across age cohorts in older populations). Interactions between residence patterns and age were examined. When looking at these combinations, differences among residence cohorts and age cohorts were found. Age differences were also found. Nine individuals were then selected for personal interviews in Phase II.

A questionnaire was designed for Phase II which examined each individual's perception of needs and resources in the areas of housing, transportation and health care.

The residence patterns of the individuals were found to have an impact on their perceptions of their needs and resources in the three areas of housing, transportation and health care. The newcomers and mixers were less likely to be knowledgeable about what was available in regard to transportation and also less likely to have family around them to see that they had transportation when needed. Differences in health care reflected a lack of trust of the Smalltown doctors and hospitals. Newcomers were found to be more likely to either go into the urban area when needing care or not get that care as promptly as they would if said care was more easily accessible to them. Themes emerged which indicated that the levels of satisfaction, assimilation, independence and future concerns differ among newcomers, mixers and oldtimers.

Understanding differences in perceived needs and resources can help us to better serve this diverse population of rural small town elders. These results can provide indicators for future research and help to better understand the diversity among the aging rural population. This in turn can be beneficial to service providers when looking at types of programming and services needed for these differing subgroups.

APPROVED BY RESEARCH COMMITTEE, MAY 1991

Linda Havir, Chairperson

HISTORY

THE HISTORIC PRESERVATION EXPERIENCE OF THREE MINNESOTA COMMUNITIES: RED WING, ST. CLOUD, AND FREMONT

Carrol P. Peterson

The purpose of this paper is to compare and contrast the historic preservation experience of three Minnesota communities: Red Wing, Saint Cloud, and Fremont. The federal legislation and various Acts passed relevant to historic preservation served as the basis and foundation for Heritage Preservation Commissions in the Minnesota communities of Red Wing and St. Cloud.

The National Park Service of the United States Department of the Interior was involved early and important Acts were the Antiquities Act of 1906, the Historic Sites Act of 1935, the National Trust for Historic Preservation in 1949, the National Historic Preservation Act of 1966, the Archaeological and Historic Preservation Act of 1974, the Tax Reform Act of 1976, and tax updates in 1986.

Numerous organizations formed in the communities of Red Wing and St. Cloud, culminating in Heritage Preservation Commissions. They formed for the purpose and expectation of halting demolition of historic structures, preserving them and getting those buildings on the National Register of Historic Places.

The Commission members in Red Wing and St. Cloud got advice and assistance from the Minnesota Historical Society and from various other consultants, including local county historical societies. There is possibility of a preservation group and plan for the hamlet of Fremont in Winona County, if enough local denizens get involved. Historic structures in Fremont include: The Schoolhouse, Creamery, General Store, Town Hall, and at least one Victorian style house.

There are similarities and dissimilarities in the experiences and historic preservation ordinances of Red Wing and St. Cloud, although most are only minor differences. Red Wing went through the process earlier of establishing a Historic Preservation Commission.

There is a connection between federal legislation and local communities in regard to historic preservation. Two of the most prominent agencies are the United States Department of the Interior and the National Trust for Historic Preservation.

APPROVED BY RESEARCH COMMITTEE, MAY 1991

Don L. Hofsommer, Chairperson

THE POET AND THE REVOLUTION

Kathryn H. Slayton

Partially because of the repressive nature of the governmental system in Russia during the nineteenth century, poetry and those who wrote it played a prominent role in expressing not only the personal but also the political aspirations of the population. After the October Revolution early in the twentieth century, the role of the poet was not diminished but rather was emphasized. Leading Marxist theorists sought to define the nature of art and the role the artist would play in the new regime.

Leon Trotsky was for a time one of the more lucid commentators not only on Marxist political theory but literary theory as well. During the time shortly after the revolution he and other literary critics were looking for at least one person who could be held up as the ideal poet of the revolution.

The purpose of this thesis is to discuss the general characteristics of nineteenth and early twentieth century Russian literature and to concentrate on the lives and work of three outstanding Russian poets, Alexander Blok, Vladimir Mayakovsky, and Boris Pasternak. Each of these poets was deeply affected by the events of the revolution and sought, both consciously and unconsciously, to express through their poetry not only the outward manifestations but also the inward effects of the revolution on the people of the Soviet Union. Over a span of several years, they were all discussed as being appropriate representations of the poet of the revolution.

It will be shown that none of the above poets fulfilled the criteria established shortly after the revolution determining who could become a special literary hero. However, the criteria changed over the years. As a result, Mayakovsky was officially named poet laureate of the revolution by Joseph Stalin in the mid-1930's. And it is highly possible that, with a change in political climate in the Soviet Union, Boris Pasternak may one day be recognized as, if not the only, at least one of the poets of the revolution.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1987

Paul H. Vaughter, Chairperson

SOCIAL SCIENCE

DETENTE FROM NIXON TO CARTER: ARMS CONTROL AND CRISIS PREVENTION/MANAGEMENT

Michael M. Yell

On January 20, 1969, Richard M. Nixon was inaugurated the 37th President of the United States. In his inaugural address the new President stated that U.S. relations with the Soviet Union would be moving away from the era of confrontation to an era of negotiation.

The Soviet Union made it clear that it too was willing to negotiate and work toward a less confrontational relationship. The era of detente had begun.

There were many components to detente including scientific and cultural exchanges, and trade and economic relationships. However, of all these components, none were more important or more controversial than the "rules" and agreements dealing with crisis prevention/management and arms control.

Despite agreements and negotiations in these areas, by 1976 the detente relationship had begun to falter. The Soviet Union felt that forces within the United States were against detente. They also believed that the United States was interfering in their internal affairs.

Similarly in the United States there were negative feelings toward detente. There were complaints that the Soviet Union was taking advantage of detente. Much of this disenchantment resulted from a perceived Soviet military build-up, Soviet interference in Third World conflicts, and the persecution of Soviet dissidents.

The decline of detente continued into the administration of President Jimmy Carter. This decline was hastened by the administration's emphasis on human rights. The Soviet Union complained again of interference in its internal affairs.

The negotiations between the two countries on arms control were faltering. Soviet intervention in several local conflicts was disturbing to many in the United States. However, the final blow to detente was delivered on Christmas day, 1979, when forces from the Soviet Union invaded Afghanistan.

Why did detente, after such a promising start, end as the decade of the eighties began? The attempts to control arms did not, in fact, control arms. The attempts to prevent and/or manage crisis situations did neither.

In addition to the complaints of both powers, it seems as though the greatest failure of detente was in the failure of both sides to realistically examine their differing conceptions on what detente was all about and concretely deal with these differences.

APPROVED BY RESEARCH COMMITTEE, JUNE 1986

Evan Jones, Chairperson

SPECIAL STUDIES

VALIDITY OF WHOLE-BODY BIOELECTRIC IMPEDANCE ANALYSIS IN THE PREDICTION OF PERCENT BODY FAT IN WOMEN

Karen LaRae Askim

The present study was conducted to determine the validity of BIA in the estimation of densitometrically-predicted percent body fat, and to compare the prediction errors of relative body fat values derived from BIA and skinfold measurement predictive equations. The RJL Systems, Inc. BIA and the Jackson, Pollock, and Ward sum-of-three skinfolds regression formulas were chosen for study. Body composition evaluation was performed on 90 women aged 18-32 years. Body fatness, as predicted hydrostatically, varied greatly from 12-43%.

The ANOVA revealed no significant difference between the densitometric mean fat value ($22.47 \pm 5.27\%$) and that estimated by the BIA equation ($22.75 \pm 5.35\%$). The skinfold mean ($20.72 \pm 4.41\%$) was significantly different ($p \leq 0.01$) than the criterion fat value. BIA and skinfold-predicted percent fat values were regressed against those predicted hydrostatically. This analysis produced respective correlations of $r=0.75$ and $r=0.79$ for the BIA and Jackson, *et al.* equations. The standard error of the estimate (SEE), total error (E), and coefficient-of-determination (r^2) were similar for the two prediction formulas: SEE = $\pm 3.50\%$ vs. $\pm 3.24\%$, E = $\pm 3.74\%$ vs. $\pm 3.66\%$, and $r^2 = 0.56$ vs. 0.62 for the BIA and skinfold equations, respectively.

It was concluded that, for the young women studied here, the Jackson, Pollock, and Ward equation is a slightly more accurate predictor of percent body fat over a wide range of values (12-43%) than is the BIA formula; however, both formulas are equally stable predictors for the woman who carries approximately 17-27% fat.

APPROVED BY RESEARCH COMMITTEE, MAY 1988

John M. Kelly, Chairperson

EFFECTS OF THE SOFTBALL PITCHING DISTANCE CHANGE ON OFFENSIVE AND PITCHING PERFORMANCE IN THE NORTH CENTRAL CONFERENCE

Robin K. Baker

PROBLEM: The primary purpose of this study was to investigate the effects of the recent pitching distance change (40 to 43 feet) on offensive production and pitching performance in North Central Conference (NCC) fastpitch softball. The

secondary purpose was to compare the offensive and pitching statistical changes in the NCC to the changes in the NCAA Division II Final Four tournament games three years before and after the pitching distance change.

METHODOLOGY: The study participants included the eight member teams of the North Central Conference and the teams which participated in the NCAA Division II Final Four tournaments from 1984-1989.

The offensive production and pitching performance changes in the NCC and NCAA Division II Final Four games were investigated in two ways. First, means were compared for NCC batting average and earned runs average (ERA) for the three years preceding the pitching distance change (1984-86) and three years after the change (1987-89). The same comparisons were made for fourteen offensive and pitching means resulting from NCAA Division II Final Four tournament games. Second, per game means in twelve NCC seasonal categories were compared for the three years before and the three years following the pitching distance change. Also, comparisons of the per game means resulting from NCAA Division II Final Four tournament games were made in the same twelve categories. The per game offensive and pitching statistical changes of the NCC and NCAA were then compared to determine differences.

The offensive categories studied included: team batting average, team hits, extra base hits, runs scored, and runs batted in (RBI's). The pitching categories studied included: team earned runs average (ERA), team strikeouts, team bases on balls (walks), runs allowed, earned runs allowed, hits allowed, shutouts, wild pitches, and hit by pitches.

Two methods were used to provide the analysis of data. A matched pairs t-test was implemented on the NCC and NCAA Division II Final Four tournament game data to determine if there was a significant difference between the before and after means in each offensive and pitching category. A standard t-test was performed on the NCC and NCAA Division II Final Four tournament game data to determine differences between the two groups.

FINDINGS: The three-year means for team batting average and team earned runs average in the North Central Conference showed no significant difference between the pre and post pitching distance change groups. The results of the t-test comparisons regarding the NCAA Division II Final Four tournament games showed a significant difference for team batting average (.185 for 1984-86 vs. .221 for 1987-89) at the .01 level of confidence. There were small numerical differences between six additional means, but none were significantly different.

The per game mean results in the NCC produced a significant difference in one category, team bases on balls, but the change was the opposite of what the researcher predicted. The per game means for the NCAA Division II Final Four tournament games did not provide any significant increases or decreases in the offensive and pitching categories studied.

The comparison of the North Central Conference seasonal categories to the NCAA Division II Final Four tournament game categories showed noticeable differences between the per game means, but none were significantly different.

CONCLUSIONS: Within the limitations of the study, the investigator concluded the following: (1) the collegiate pitching distance change from 40 to 43 feet in 1987 has not produced significant changes in offensive production and pitching performance in North Central Conference fastpitch softball, and (2) the pitching distance change appeared to affect the tournament game performance of NCAA Division II Final Four participants similar to its effect on the North Central Conference.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1990

Ray Collins, Chairperson

FRANK LLOYD WRIGHT: AN AMERICAN TRANSCENDENTALIST

Susan M. Bentley

The American Transcendentalists and Frank Lloyd Wright have had a significant impact on American life but little has been done linking the two together. An analysis of the life and work of Wright reveals that his world view places him as a direct descendent, philosophically, of the American Transcendentalists.

Chapter one discusses the major components of the Transcendental belief system. These include a rejection of past wisdom and a call for the development of the self as authority. The Transcendentalists also believed that intuition, rather than reason, was the key to obtaining wisdom, and that this intuition could best be developed by the deliberate study and contemplation of Nature.

Wright was influenced by these Transcendental writings, and his own interaction with the natural world led him to the conviction that Nature was the greatest source of inspiration. He translated these beliefs into an architectural system that he called "Organic Architecture." Chapter two examines the development of Wright's Transcendental beliefs and explains his architectural philosophy.

Chapter three is devoted to an examination of specific buildings Wright designed and the ways in which they physically represent Transcendental philosophy through his employment of organic principles.

APPROVED BY RESEARCH COMMITTEE, MAY 1990

Eleanor Simpson, Chairperson

THE DEVELOPMENT OF WEIGHT-ADJUSTED ESTIMATES OF CALORIC EXPENDITURES FOR THE NORDIC TRACK

Michelle L. Bowes

The purpose of this study was to assess and quantify the metabolic cost of Nordic Track exercise. The direct determination of oxygen consumption was used to estimate caloric cost of twenty trained male skiers (age 26.8 ± 6.8 yr and mass 75.6 ± 12.7 kg) while exercising on a model 600 Nordic Track ski ergometer. The physiological parameters measured included: HR, R, RR, VO_2 , VCO_2 , and VE. Measurements were recorded at several power outputs (combinations of varying speeds and resistances). The subjects were tested on two separate days with each session consisting of 15 randomized stages. The 30 stages were divided equally between arm exercise, leg exercise, and the combined action of "skiing". The stages were three minutes in duration or until a steady state oxygen consumption was achieved. Pacing was set using a metronome adjusted to the subject's stride length to keep the speedometer reading constant. The Nordic Track was calibrated before, periodically during and after the testing to ensure consistency. Multiple regression analysis was used to estimate caloric expenditures of Nordic Track exercise. Subject mass, arm pull rate, speedometer reading, and arm and leg resistances were the independent variables used to predict caloric expenditure for the three different exercises. Arm resistance was a constant 25% of the total resistance (arm+leg) during the combined exercise. The average respiratory exchange ratio (R) across all subjects and power outputs was 0.88. Therefore, a conversion of $4.9 \text{ Kcal}\cdot\text{liter}^{-1}$ was used in the development of the caloric expenditure charts. A linear regression equation for the combined activity $\{ \text{Kcal} = 0.09 \cdot \text{mass (kg)} + 0.73 \cdot \text{speedometer reading (km}\cdot\text{hr}^{-1}) + 0.25 \cdot \text{leg resistance (lbs)} - 4.8 \}$ was used to construct caloric expenditure charts. The multiple correlation between the dependent and independent variables was 0.85 and the standard error was 1.37 kilocalories. The initial test and retest caloric expenditures were correlated to demonstrate the reliability of testing. The results demonstrated that body weight had a sizeable effect on the caloric expenditure of Nordic Track skiing: $6 + 0.09 \text{ Kcal}\cdot\text{kg}^{-1}$ increase in body mass. The equation was cross-validated with an independent sample and estimated caloric expenditures were found to accurately estimate the actual expenditures, within one standard error of the regression line.

APPROVED BY RESEARCH COMMITTEE, JANUARY 1990
John M. Kelly, Chairperson

THE RELIABILITY OF THE INDIVIDUAL ANAEROBIC THRESHOLD IN SWIMMING

John S. Brandstetter

The purpose of this study was two fold; first, to determine if the individual anaerobic threshold (IAT) in trained swimmers was reliable from day to day. Secondly, to determine the effect of biomechanical efficiency on lactate response.

Each of the seven subjects that participated in this study were required to perform four swimming tests. A maximal 365.8 meter swim (MAX) was performed by each subject. A maximal 30 minute swim (T30) was performed to estimate the individual anaerobic threshold velocity (IAT). Each subject swam a set of six--365.8 meter swims (SET 1) at the mean velocity from the T30 swim. On a subsequent day a second set of 6 x 365.8 meter swims (SET 2) was performed in the same manner as SET 1.

The best fit line through the lactate data from SET 1 gave an average slope of -0.05 ± 0.18 mmol·interval⁻¹. This supports the use of the T30 velocity as a good predictor of IAT. The analysis of variance (ANOVA) showed that there was no significant difference between the three velocities, T30, SET 1 And SET 2 ($P > 0.05$). The lactate slope data showed no significant difference ($P > 0.05$) between SET 1 and SET 2 (-0.05 and -0.15 mmol·interval⁻¹, respectively). The oxygen consumption did not show any significant difference ($P > 0.05$) from SET 1 to SET 2 (2.97 and 2.99 l·min⁻¹). The distance per stroke (D/S) data (2.28 and 2.28 meters·stroke⁻¹) and stroke time (ST) data (1.85 and 1.84 seconds·stroke⁻¹) also showed no difference ($P > 0.05$).

Although the mean data for the slopes of the lactate data were reproducible, the correlation between SET 1 and SET 2 was low ($r = 0.27$).

In conclusion, the IAT was successfully estimated for this group of swimmers by the T30 swim. With no difference in D/S and ST there was no difference in the average IAT during the two sets (SET 1 and SET 2). The mean lactate values and lactate slopes showed no change from one day to the next. However, the low correlation between the lactate slopes from the two sets (SET 1 and SET 2) indicates that there was variability within the individual subjects that did not affect the mean for the group. Because there were no changes in the ST and D/S, no conclusion can be drawn on the effects of biomechanics. However, there was no change in the mean IAT when there was no change in the biomechanical parameters.

APPROVED BY RESEARCH COMMITTEE, MARCH 1991
John M. Kelly, Chairperson

PROFILE OF PARENT EDUCATION PROGRAMS AVAILABLE THROUGH MIDDLE LEVEL SCHOOLS IN SELECTED MINNESOTA COUNTIES

Cynthia R. Cummings

The purpose of this study was to determine what programs middle level schools in a ten county area surrounding St. Cloud, Minnesota, are offering to the parents of their students with respect to parenting the early adolescent. From the information provided by schools who do offer such programs, profile data were developed concerning the content, format and structure of the programs. These data can be used to guide the development of parent education programs for parents of early adolescents.

The definition of parent education used in this study is as follows: parent education refers to organized, planned efforts designed to enhance understanding of early adolescents, and/or performance in the parental role.

The sample for this study was 104 principals from the 55 public school districts within the ten county area surrounding St. Cloud, Minnesota.

A questionnaire was designed and developed to obtain the profile information desired regarding parent education offerings.

Forty-three responses were received from schools which offer parent education programs for parents of early adolescents. Thirty-six responses were received from schools which do not offer parent education programs for parents of early adolescents.

The majority of schools with programs offered one to four two-hour sessions per year in a lecture or lecture/audience participation format. Thirty to 60 participants were generally in attendance. It was most common for someone on the school staff to conduct the session and to be paid from the school budget.

The three most popular topics included an overview of early adolescent development, sessions on self-concept and drug education. Sessions were generally open to everyone, and advertised through the school newsletter and community newspaper.

The ten schools which offered programs reaching the largest number of parents, as determined from the data collected on the questionnaires, were contacted for a second time. The five schools which offered programs reaching the smallest number of parents were also contacted for a second time. Interviews were conducted to assess whether, in the opinion of the principal or designated school contact person, the sessions effectively offered assistance specifically to parents of early adolescents.

The interviews clearly indicated that they felt their programs were effective and were meeting the needs of parents of early adolescents.

Attendance at parenting sessions offered through the school was influenced by the availability of other parenting sessions in the community.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1988

Russell Schmidt, Chairperson

EXAMINATION OF FEMALE CLIENT SATISFACTION, POST ALCOHOLISM/CHEMICAL DEPENDENCY TREATMENT, WITH THE SERVICES RECEIVED AT THE TREATMENT FACILITY

Mary Anne Daniel

This study was designed to examine whether female clients express differences in satisfaction with their treatment at a chemical dependency treatment program compared with a representative group of males. Three hundred eighty women and men who had completed treatment in 1983 and 1985 for chemical dependency at a facility located in central Minnesota were surveyed. All female clients and an equal number of male clients selected by random sample were included in the study. The predominately white subjects ranged in age from 15 to 74 years. Education, relationship and marital status and employment status of the subjects spanned a wide range while gross household income ranged from \$5,000 to above \$50,000.

A coded client evaluation/satisfaction questionnaire using a Likert scale to measure degree of intensity was developed and submitted to a jury of experts for assessment of content validity. Questionnaires were mailed to subjects. All questionnaires returned for incorrect address were corrected, if possible, and remailed. A follow-up coded card was mailed to subjects who did not return the questionnaire within two weeks.

The overall response rate was 31%. A chi-square was used to analyze the data. The ordinal data was individually compared based on dependent variables and independent variables through the use of cross-tabulation. The summed scores resulting from the Likert scaling were analyzed utilizing an overall and individual frequency distribution to ascertain measure of central tendency.

FINDINGS: The results indicated no statistically significant difference existed at the .05 level, overall, between female client satisfaction and male client satisfaction and across programs or year. Significant differences in areas of demographic data and gender related preferences such as living arrangements and employment status were reported.

Female clients reported "different treatment because of their gender" at a statistically significant higher level, .05, than their male counterpart. Also, females would have "preferred a same sex group" at a statistically significant higher level, .00, than their male counterparts. Although not statistically significant, the results indicate a possible relationship or association between satisfaction and the reported willingness of both females and males to return to the program. Females indicated they would not return to the program to a greater degree than males.

It was concluded that no statistically significant differences existed between females and males in levels of satisfaction. Significant differences in demographic data and gender related preferences such as living arrangements and desire for a same sex group, were noted in comparisons between sexes, programs and years. It was recommended that the study be repeated and the population be stabilized through utilization of phone interviews or person-to-person interviews to increase the response rate and provide more accurate data.

APPROVED BY RESEARCH COMMITTEE, NOVEMBER 1987

Frank P. Osendorf, Chairperson

A SURVEY OF NCAA DIVISION I COLLEGES AND UNIVERSITIES AND THEIR DRUG EDUCATION PROGRAMS

Tracy L. Dill

PURPOSE: The purpose of this study was to describe the major functions and list criteria for drug education programs. Drug testing, drug education classes, and drug counseling were investigated.

LIMITATIONS: The study was limited to 127 NCAA Division I institutions. This study sought to gather and compile data from the drug education programs in these colleges and universities.

PROCEDURES: The data from this study were obtained from NCAA Division I institutions that currently have drug education programs. A questionnaire was sent to 127 schools. From the 127 schools, eighty returned the questionnaire and seventy-five were involved in the study.

TREATMENT OF DATA: The data were compiled from the findings of the questionnaire. Percentages and a chi-square statistic were calculated for different questions from the study. A null hypothesis was then established and tested.

FINDINGS: The findings of this study presented an overall look for drug education programs in NCAA Division I institutions. The results indicated: (a) major reasons for drug education programs, (b) overwhelming evidence for requiring student-athletes to participate in drug education classes, (c) a need for lectures, drug counselors, drug testing and discipline if a student-athlete tests positive for drug usage, and (d) benefits already experienced from drug education programs.

APPROVED BY RESEARCH COMMITTEE, MAY 1987

Morris Kurtz, Chairperson

A STUDY OF LEADERSHIP IN ORGANIZATIONS AND HIGHER EDUCATION

Sara A. Grachek

PROBLEM: Many members of business organizations rely on an abundance of materials to learn about leadership education or training. Relying solely on these materials can be costly and are probably only semi-related to leadership education or training. An alternative, often less costly, and with some semblance of relatedness, might be higher education. The purpose of this study is to examine whether four-year colleges and universities can provide the type of leadership education or training currently being sought by business organizations.

PROCEDURE: Business organizations were surveyed as to whether they felt leadership education at the college and university level would be helpful for their organizations, the topics sought to be taught by colleges and universities, and how members in organizations defined the term leadership. Colleges and universities were surveyed as to the leadership instruction they offered, and what leadership topics were considered most important.

FINDINGS: It was found that business organizations believe leadership education at the college and university level would be helpful to their organizations. The leadership topics sought by businesses to be taught by higher education included leadership versus management, leadership styles, empowerment/power, and leadership ethics. Members of organizations defined the term leadership in different ways, but the terms strategic planning and empowering others were chosen by a majority of participants. Colleges and universities offer many leadership topics including group leadership and leadership styles; however, leadership styles and empowerment/power were considered most important to the study of leadership.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1990

Dr. Fred Hill, Chairperson

METABOLIC RESPONSES OF UPPER BODY TRAINING ON ARM, LEG AND COMBINED ARM-LEG EXERCISE

John W. Grogan

The purpose of this investigation was to study the effects an eight week upper body training program had upon maximal metabolic responses and ratings of perceived exertion in highly trained runners with relatively poor initial upper body conditioning.

Maximal metabolic responses (HR, R, V_E , VO_2 max) and ratings of perceived exertion (RPE) were collected on ten highly trained runners (43 miles per week) during progressive maximal arm (wall pulleys), leg (treadmill walk/running) and combined arm-leg (ski-walking) exercise protocols in pre-test and post-testing conditions. Following the pre-test battery, the experimental group (n=7) participated in an eight week (three sessions/week, 45 minutes/session) upper body training program. Each upper body training session was composed of three sets of each of the following exercises: a) 20 repetitions on a rollerboard, b) 20 repetitions of tricep chair dips and c) three minutes of diagonal striding arm work. The control group (n=3) did not participate in the upper body training sessions or any other formal or informal upper body strength or power workouts during the time course of the study. All subjects were encouraged to maintain their pre-investigation running schedules throughout the study regardless of experimental or control status.

Pre to post results of arms only exercise indicated significant ($p < .05$) increases in VO_2 max (15.7%) and V_E max (17.7%). Rollerboard performance increased 408.5% ($p > .05$). There were no significant increases in maximal cardiorespiratory responses or RPE for leg or combined arm-leg exercise. The results suggest the following conclusions: 1) the specificity of arm training produced significant increases in arms only VO_2 max in athletes with an already highly

trained central circulatory component and 2) the lack of an increase in combined arm-leg exercise VO_2 max suggests that the central circulation was the limiting factor for VO_2 max in this model.

APPROVED BY RESEARCH COMMITTEE, MAY 1987

John M. Kelly, Chairperson

THE EFFECTS OF SHOE MASS DISTRIBUTION ON PHYSIOLOGICAL AND MECHANICAL RESPONSES DURING DISTANCE RUNNING

Kristopher P. Hartner

While the effects of many running shoe design parameters are routinely evaluated, the effects of shoe mass distribution have never been reported. Therefore, the purpose of the present study was to determine the effects of shoe mass distribution on the physiological and mechanical responses to distance running. To examine these effects, ten highly skilled male distance runners participated in a single testing session. The testing session consisted of four eight min treadmill runs, separated by five min rest periods, at a speed of $3.8 \text{ m}\cdot\text{s}^{-1}$. VO_2 , HR, resultant joint moments (RJMs), and mechanical work done by the RJMs were calculated for each of the following loading conditions: no load, 200 g added at the heel of each shoe and 200 g added at the toe of each shoe.

Repeated measures ANOVA and a Tukey HSD post-hoc test were used to test for significant differences between means. Significance was set at the 0.05 level. VO_2 and HR were significantly different for all testing conditions (Table A). The greatest values were obtained when load was added at the toe. The respective increases over baseline and heel load conditions for the toe load condition were: 4.25% and 1.82% for VO_2 and 2.39% and 0.72% for HR. The only significant increases in average RJM or total mechanical work during the swing phase were found for the two loaded conditions as compared to the baseline (Table A). Increases in average RJM, over baseline, were 5.71% and 7.18% for the heel and toe load conditions. Total mechanical work increases, over baseline, were 7.97% and 12.01% for the heel and toe load conditions.

TABLE A. Physiological and mechanical data for each testing condition (mean \pm SE)

Variable	No Load	Heel Load	Toe Load
VO_2 ($\text{ml}\cdot\text{kg}^{-1}\cdot\text{min}^{-1}$)	44.66 ± 0.633	45.67 ± 0.637	46.50 ± 0.627
HR ($\text{beats}\cdot\text{min}^{-1}$)	150.4 ± 3.38	152.9 ± 3.37	154.0 ± 3.30
Average RJM (Nm)	54.3 ± 2.52	57.4 ± 2.53	58.2 ± 2.50
Total Work (joules)	96.6 ± 5.49	104.3 ± 5.61	108.2 ± 5.70

All differences are significant ($P < 0.05$) except between heel and toe load RJM and work.

The findings of this study showed that shoe mass distribution has measurable effects on physiological responses during distance running. Increase in aerobic demand nearly doubled when the 200 g added load was moved from the heel to the toe. These findings indicate that shoe design modifications, aimed at reducing the distal mass of a running shoe, can have a positive effect on a runners economy.

APPROVED BY RESEARCH COMMITTEE, MAY 1991

Glenn M. Street, Chairperson

COMPARISON OF MAXIMAL OXYGEN CONSUMPTION USING AN ARM CRANK AND A WHEELCHAIR-LIKE ARM ERGOMETER

Lisa M. Hebl

The purpose of this study was to compare maximal oxygen consumption between two upper body ergometers. Five trained able-bodied (TR AB), five untrained able-bodied (UNTR AB), and five trained disabled (TR DA) individuals performed maximal effort tests on an arm crank ergometer (AC) and an upper body ergometer (AE). Protocols with each ergometer used one minute stages with increases in resistance of .25 kg per stage. Initial resistance for the AC was 1 kg and .5 kg for the AE. One hour separated the tests. A 2 x 3 factor repeated measures ANOVA ($p < .05$) showed significance in maximal values of VO_2 and HR for all factors. A Fisher LSD post hoc test for simple main effects was also performed.

Results Obtained with AC and AE.

	TR AB	UNTR AB	TR DA
$\text{VO}_{2\text{max}}$($\text{L}\cdot\text{min}^{-1}$)			
Arm Crank	$2.99 \pm .16$	$2.46 \pm .14$	$1.46 \pm .14$
Arm Ergometer	$2.45 \pm .17$	$1.67 \pm .13$	$1.24 \pm .16$
Heart Rate(bpm)			
Arm Crank	178.8 ± 5	165.2 ± 4.91	182.4 ± 5.89
Arm Ergometer	171.6 ± 6.5	139.6 ± 10.32	180 ± 3.78

Within group comparisons for both ergometers showed mean VO_2 max significantly higher with the AC than the AE for TR AB, UNTR AB, and TR DA subjects (18%, 32%, and 15%, respectively). Mean maximal HR values were significantly higher only for the UNTR AB group. Between group comparisons for the AC showed differences in VO_2 max between TR AB and TR DA subjects, and between UNTR AB and TR DA subjects. Differences in mean maximal HR were also seen among the UNTR AB group and the other two groups. Comparisons of the AE showed mean VO_2 max differences among all three groups. Mean maximal HR obtained with the AE was lower in the UNTR AB group than in both other groups. These results show that the AC elicited a higher VO_2 max value than the AE for all three groups. These data support other research that able-bodied subjects should not be used in research attempting to transfer their conclusions to a disabled population.

APPROVED BY RESEARCH COMMITTEE, MAY 1991

John M. Kelly, Chairperson

A SWIMMING PROTOCOL FOR DETERMINATION OF INDIVIDUAL ANAEROBIC THRESHOLD

Michael S. Hein -

The purpose of this investigation was to determine if a modified Stegmann protocol was effective in assessing a swimmer's individual anaerobic threshold (IAT). The ability of the test protocol to assess the IAT training velocity of each swimmer was shown by utilizing a series of fourteen two hundred yard swims allowing approximately ten seconds rest between swims.

Eight well conditioned male competitive swimmers volunteered for the study. Testing was done in the pool during free front crawl swimming using the test protocol of five four hundred yard stages swam at a designated velocity. Oxygen consumption via backward extrapolation and blood lactate concentration via electrochemical analysis were

determined after each stage and during recovery after the final stage of the protocol. The series of fourteen two hundred yard swims were conducted at the predicted IAT velocity and at the $0.066 \text{ m}\cdot\text{s}^{-1}$ faster than the first series. Blood lactates were taken during the short rest intervals between the two hundred yard swims.

The hypothesis stated that the test protocol would not be able to predict the IAT velocity for each swimmer within a velocity range of $0.066 \text{ m}\cdot\text{s}^{-1}$. The results of the investigation suggest that the test protocol was effective in determining IAT velocities within the velocity range stated. However, there was evidence to conclude that blood lactate during interval sets was not reflective of predicted lactate concentrations.

APPROVED BY RESEARCH COMMITTEE, OCTOBER 1988

John M. Kelly, Chairperson

THE DAHL FAMILY: A CASE STUDY IN FAMILY HISTORY

Marilyn Kathryn Dahl Hensley

Drawing upon research completed prior to February, 1990, this case study in progress traces the Simon C. Dahl branch of the Christopher Olson Ovredal family through the direct line to Simon's great-granddaughter, Marilyn Dahl Hensley. It acknowledges conditions in nineteenth century Norway that may have lead to the family's decision to emigrate; relates how the family survived and adapted to the Minnesota frontier; and follows Simon's son, Conrad S. Dahl, from small town life in the early 1900's through the turmoil of the Home Front during World War II. Arnold S. Dahl, Conrad's son, and Arnold's daughter, Marilyn Dahl Hensley, carry the Dahl's story into the present.

Distaff lineages are represented by a brief summary of the Zierath family. Andrew C. Zierath and his family emigrated from Prussia in the mid-nineteenth century. Sophia Zierath, Andrew's granddaughter, married Conrad S. Dahl. The process of writing a family history is touched upon through a series of notes which supplement the text. These notes also contain interesting or pertinent historical information that, if it had been included in the body of the text, would have interrupted the flow of the history.

This study also explores the use of family artifacts as an additional source of both primary and corroborative historical information. While the corroborative and illustrative value of artifacts seems to be confirmed by this research, the value of family artifacts as primary sources, except for the most basic information, is still in question. The researcher's personal familiarity with an artifact and its history can create a bias which may taint the researcher's conclusions.

APPROVED BY RESEARCH COMMITTEE, MAY 1990

William T. Morgan, Chairperson

ASSESSMENT OF PEAK OXYGEN UPTAKE DURING RESTRICTED AND UNRESTRICTED ARM WORK IN CROSS-COUNTRY SKIERS

David A. Johnson

The purpose of this investigation was to assess the effects of restricted and unrestricted arm work on the peak physiological response during diagonal stride arm-pulling and arm cranking in cross-country skiers.

Fourteen male subjects performed five maximal exercise tests: (1) uphill running treadmill (LEG), (2) a standing cross-country ski diagonal stride unrestricted arm-pull (SUR-SKI), (3) a standing cross-country ski diagonal stride restricted arm-pull (SR-SKI), (4) a sitting cross-country ski diagonal stride arm-pull (SIT-SKI), (5) a sitting arm crank (Arm Crank). Peak oxygen uptake (VO_2), minute ventilation (VE), heart rate (HR), respiratory exchange ratio (R), relative perceived exertion (RPE), work, and power were measured during all tests. The LEG test was found to be

significantly higher ($p < 0.01$) in all variables measured, from the four arm tests. The SUR-SKI peak VO_2 (3.500 L/min) was significantly larger ($p < 0.01$) from the SR-SKI (2.838 L/min), SIT-SKI (2.944 L/min), and Arm Crank (2.721 L/min) tests. Peak VO_2 expressed as a percentage of the LEG VO_2 max (4.496 L/min), was found to be 78% for SUR-SKI, 63% for SR-SKI, 65.5% for SIT-SKI, and 60.5% for Arm Crank. No significant differences were found in peak VO_2 and HR among the SR-SKI, SIT-SKI, and Arm Crank protocols. SR-SKI and SIT-SKI were shown to have no significant differences in all variables measured.

These data would indicate that the physiological variables measured during arm work can be affected by the addition of muscle mass due to the extraneous movements of the shoulders, torso, and hip. This suggests that close attention should be given to standardizing the arm testing protocol when testing arm work in cross-country skiers.

APPROVED BY RESEARCH COMMITTEE, NOVEMBER 1987

John M. Kelly, Chairperson

THE STUDENT-ATHLETE AS EXPLOITED MARKET-AGENT IN INTERCOLLEGIATE ATHLETICS

Shawn A. Kakuk

Intercollegiate athletics has become big business. A corporate mentality, shrouded by a guise of amateurism, dominates the administration of intercollegiate athletics. Football and basketball programs at the Division I level, defined as the major athletic programs in the text, are scaled down versions of their professional counterparts. Athletic expenses continue to grow, and are rarely matched by athletic revenue.

Financial losses do not limit the scope of the athletic department's operations, since the athletic department has become adept at diverting general university funds into their own accounts. Unlike the Chief Executive Officers of large corporations, who continually watch the bottom line of the ledger, athletic directors spend money that they do not have because the university will bail them out. Due to these circumstances, athletic programs are constantly growing with the attitude that to make money, one needs to spend money. It also does not hurt to have the university safety net to break

one's fall. Faculty, students and tax-payers pay for these practices, in the form of salary cuts and/or caps for faculty and support staff, limitations in academic programs and limited student services. Profit motives are the driving force behind the college sports infrastructure.

Aside from the drive to increase revenues and profits, intercollegiate athletics also suffers from the egocentric actions of athletic administrators and coaches who view themselves as the axis that all college sports revolves around, neglecting and even objectifying the student-athlete in the process. For their efforts and talents, the student-athlete receives a "free" education in the form of an athletic scholarship. This grant-in-aid is valued from \$5,000-\$10,000 at the average public institution, and up to \$20,000 at a private institution, while some of their coaches and administrators receive salaries and perks that reach hundreds of thousands of dollars.

Although the student-athlete is promised an education, literary research, along with data collected from the 1990 Intercollegiate Football Players Survey, indicates otherwise. This opportunity to obtain a college degree is greatly impeded by the time commitment, both in and out of season, required of football players at the Division I level of competition. At best, the student-athlete maintains minimal academic progress, and in most cases only to remain eligible to participate in intercollegiate athletics.

It is not only the time commitment required of student-athletes that stunts academic growth. The pervasive attitudes that exist in the realm of, and control the world of, intercollegiate athletics are also a hindrance to not only the academic growth of the student-athlete, but their personal growth as well. These attitudes include strict militaristic disciplinary regimes, objectification and dehumanization of the student-athlete by coaches, emphasis on athletics, rather than academics and the exploitation of the student-athletes talents (labor) to generate profits for those who administer the athletic program.

FINDINGS: Conclusions and recommendations based on the data suggest that major reforms are needed in order to end the exploitation of the student-athlete. Limiting the scope of athletic department operations, outside accreditation and certification procedures to insure "fair play" among the participants in intercollegiate athletics, the removal of athletic personnel who do not have the student-athlete's best interest in mind and the proper compensation for the student-athlete are the primary areas of reform discussed in this paper.

APPROVED BY RESEARCH COMMITTEE, MAY 1991

John M. Kilkelly, Chairperson

AN EMPIRICAL MONEY DEMAND FUNCTION FOR UGANDA

Loy Elizabeth Magoba

During the 1970's, oil prices increased sharply as a result of united actions taken by the Organization of Petroleum Exporting Countries (OPEC). Because of this, developing countries heavily borrowed money to pay for oil and other increasingly expensive imports. In addition, developed nations tightened their money supply which drove industrial economies into a recession and pushed world interest rates up. The above two events created a heavy external debt for a number of the developing nations.

This paper investigates the central role played by the International Monetary Fund (IMF) in trying to solve the debt problem. Focusing on Uganda, an empirical study was conducted. The purpose for this study was to derive a money demand function for that country which would provide a means by which to implement fruitful monetary policies and possibly reduce the debt.

Evidence showed that Uganda's money demand is a function of income, interest rates, and the expected rate of inflation. Implications of this finding are to carefully analyze the three aforementioned variables in order to put Uganda on a sound economic track.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1990

Masoud Moghaddam, Chairperson

AVAILABILITY AND DESIRABILITY OF NUTRITION SERVICES IN RURAL MINNESOTA HOSPITALS AND CLINICS AS REPORTED BY ADMINISTRATORS, PHYSICIANS AND DIETITIANS

Donna J. Malum

The current investigation was a study of the availability and desirability of thirteen nutrition services as reported by administrators, physicians, and dietitians in rural Minnesota. The nutrition services rated by these groups were taken from the Nutrition Services Coding System of the American Dietetic Association. The survey instrument was author developed and tested.

The results of the survey were examined and ratings compared. Chi square (X^2) analysis was used to analyze the relationships between groups. The SPSSX crosstabs program for the Univac computer facilitated this analysis.

Twelve nutrition services were rated as available and desirable by all three groups and no statistically significant difference was found between administrators, physicians and dietitians. The remaining service, Nutrition Care as Part of Patient Related Team Conferences, was statistically significant indicating a difference between groups. Physicians in Minnesota rated this service as unavailable and undesirable. Administrators and dietitians rated the service as available and desirable.

Differences on individual nutrition services between groups also was compared. Administrators, physicians and dietitians agreed on two services for availability (Nutrition Counseling--Individual and Nutrition Supplements and Tube

Feedings Prescription and Formulation) and desirability (Nutrition Analysis and Nutrition Education Group). Five nutrition service ratings for availability showed differences between the three groups sampled and eight nutrition service ratings for desirability showed differences between the three groups sampled.

Comparison of the three groups' rating of availability and high desirability showed availability of all nutrition services, except one, rated above high desirability. The one exception was nutrition support teams. Dietitians' rating of high desirability exceeded their rating of availability for this service only.

In conclusion, this study confirmed that nutrition services of a complex nature are available and desirable in rural Minnesota. Administrators and physicians as well as dietitians are aware of nutrition services and are viewed as desirable. Dietitians tended slightly to see several nutrition services as less available and more desirable than administrators and physicians.

APPROVED BY RESEARCH COMMITTEE, NOVEMBER 1986

Mary Dwyer, Chairperson

EFFECTS OF DOWNHILL RUNNING ON SPRINTING PERFORMANCE

Ann M. McKenna

The purpose of this study was to investigate the effects of downhill running on sprinting performance. Collegiate female sprinters were matched by ability and randomly assigned to an uphill (n=6) or downhill (n=6) group. A 200m time trial (TT) was performed on a track initially and every two weeks to readjust training speed and monitor the effects of training. Training was performed on a treadmill; five sprints, three times per week for six weeks. The training treadmill speeds and angles were 70% of their most recent time trial speed and $\pm 3^\circ$ (weeks 1-2), 60%, $\pm 6^\circ$ (weeks 3-4), and 50%, $\pm 9^\circ$ (weeks 5-6). Heart rates (HR), perceived exertion (RPE), and 24hr post exercise muscle soreness (MS) were recorded throughout training. During each TT, two strides were video taped and subsequently analyzed for stance time (ST), swing time (SWT), step rate (SR) and step length (SL).

The data were analyzed by a two factor, repeated measures ANOVA ($p < .05$). Mean HR and RPE were significantly higher for the uphill group throughout training, 15.3% and 33.8% respectively. Mean MS, SR, and SL were not different between groups. Mean TT, ST, SWT were not different between groups, but each improved significantly

with subsequent weeks of training. Over the six weeks, mean TT improved from 29.75s to 29.1s, mean SWT significantly increased from .21s to .22s, mean ST decreased significantly from .13s to .10s. These data suggest downhill training can provide similar performance effects as uphill running with less metabolic demand and perceived effort during training.

APPROVED BY RESEARCH COMMITTEE, MAY 1990

John M. Kelly, Chairperson

CORRELATIONS OF LABORATORY TESTS TO DISTANCE RUNNING PERFORMANCE DURING A CROSS-COUNTRY TRACK SEASON

Teese M. Mosenthal

The purpose of this investigation was to measure blood lactate (La), running economy (RE), and maximal oxygen uptake ($\text{VO}_2 \text{ max}$) during a cross-country season and correlate these measurements to distance running performance (DRP) in

a 5000 meter race in order to determine which measurement(s) was the best predictor(s) of performance. Nine women who were members of the St. Cloud State University cross-country running team volunteered to participate in this study. The women participated in four submaximal treadmill tests during which blood samples and expired air were collected. The blood samples were analyzed for lactate concentration using a Roche model #640 lactate analyzer. Expired air was collected in meteorological balloons and analyzed for CO_2 and O_2 concentrations utilizing an Ametek CD-3A carbon dioxide analyzer and S-3A Electrochemistry oxygen analyzer. Running economy was the VO_2 calculated at the second stage treadmill velocity of $3.80 \text{ m}\cdot\text{s}^{-1}$. Subjects also participated in a pre-season and post-season maximal treadmill test during which expired air was again collected in order to calculate VO_2 max. The women ran 5000 meters competitively eight times throughout the season. Running times ($\text{m}\cdot\text{s}^{-1}$) were taken from races which coincided most closely with the administration times of treadmill tests.

Correlations between lactate when expressed as $\text{mmol}\cdot\text{l}^{-1}$, percent VO_2 max, or four $\text{mmol}\cdot\text{l}^{-1}$ velocity and DRP were significant ($p < 0.05$). The second submaximal stage lactate concentration and four $\text{mmol}\cdot\text{l}^{-1}$ velocity correlated most significantly with DRP (-0.736 and $+0.634$ respectively). VO_2 max and RE did not correlate significantly with DRP ($r = +0.441$; $p > 0.05$ and $r = -0.282$; $p > 0.05$ respectively). A stepwise multiple regression analysis incorporating the three variables indicated that lactate two (second stage lactate concentration) was the best predictor of DRP and adding RE and VO_2 max did not improve the correlation any further. Submaximal lactate concentrations when expressed as $\text{mmol}\cdot\text{l}^{-1}$ and four $\text{mmol}\cdot\text{l}^{-1}$ velocity did change significantly throughout the cross-country season ($p < 0.05$). DRP also changed significantly throughout the season ($p < 0.05$). RE and VO_2 max did not change significantly throughout the season ($p > 0.05$).

The results of this investigation indicated that lactate is the best predictor of distance running performance and the lowering of submaximal lactate concentrations throughout the season explains to the greatest degree the improvement in distance running performance. The implications of this study are that submaximal lactate concentrations at or near anaerobic threshold can predict running performance better than other variables among a group of homogeneous collegiate athletes, and a submaximal treadmill protocol can be set up to test these athletes and measure blood lactates as an accurate method to assess abilities

APPROVED BY RESEARCH COMMITTEE, MAY 1988

John M. Kelly, Chairperson

EFFECTS OF SHAVING ON SWIMMING PERFORMANCE

Douglas P. Naylor

The purpose of this investigation was to determine whether shaving body hair affects the metabolic cost of front crawl swimming for competitive swimmers.

Four males and three females (all members of the 1988-89 St. Cloud State University men's and women's swimming teams) volunteered to participate as subjects. Testing was conducted in a 25-yard pool. The data collection was completed over a five day period, with the subjects swimming unshaved on days one and two, resting on day three, and swimming shaved on days four and five. Each day, the subjects performed four paced, 400-yard front crawl swims; one each at 70%, 80%, 90%, and 100% of his/her maximum pace, with a rest period of approximately 15 minutes between each swim. Blood lactate concentration, oxygen consumption (VO_2), respiratory exchange ratio (R), the number of strokes taken per length and time were measured for each swim.

All of the variables had slightly reduced values at the three submaximal levels of intensity (except time, which was controlled with a pacing system) following shaving when compared to the pre-shaving values. However, none of these reductions were significant ($p > .05$). At the maximal level, VO_2 was reduced by four percent ($p < .05$) and time by two percent ($p < .05$) post-shaving when compared to pre-shaving. Blood lactate concentration and R tended to be slightly

higher at the maximal level after shaving, but this increase was not significant. The results of this investigation indicate that shaving body hair may have some affect on the metabolic cost and performance times of front crawl swimming.

APPROVED BY RESEARCH COMMITTEE, MAY 1990

John M. Kelly, Chairperson

AN ASSESSMENT OF THE NEED FOR IMPROVED RECREATION IN PRINCETON, MINNESOTA

Bradley D. Pickle

The purpose of this paper was to assess the need for improved recreation in the city of Princeton, Minnesota. The study:

1. compared other city's recreation programs that allowed knowledgeable recommendations to be made that helped in the development of Princeton's program,
2. compared different groups within the population to determine if there was a significant difference between the groups,
3. determined the extent of past participation in recreation programs,
4. determined the future intent to participate in recreation programs.

To accomplish these purposes three surveys were part of the research. An outside city survey was sent to 102 cities of comparable size to Princeton. Of this total 66% were returned in its completed form. A total of 1,113 surveys, which included the Leisure Satisfaction Scale (LSS) and the Leisure Activities Blank (LAB) were sent to randomly determined box numbers in the Princeton mailing areas. Fifty three percent of this total correctly completed and returned the LSS survey and 15% fully completed the LAB survey.

A frequency distribution was conducted on the data returned from the outside city survey to obtain trends in recreation departments for cities of like size to Princeton. The LAB was analyzed by conducting a frequency distribution to determine the type of response to each activity for age groups and males/females. A two-way analysis of variance was

completed on the LSS to compare the responses of the different age groups, as well as the males and females while a Scheffe' test was conducted on the leisure needs which were proven to be significantly different among the different age groups. This test determined which of the age groups had different needs.

One of the major findings of this study was the joint powers agreements between cities and school districts being a trend of recreation departments. Programming to meet physiological needs for different age groups was determined to be very important for a successful recreation program. Social and aesthetic needs were also important but not to as wide a variety of age groups as physiological needs. There was also a significant difference between males and females in their attitudes for relaxation and physiological needs to be met in recreation activities. There are many activities which are not currently meeting the needs of Princeton's residents. Those activities can be programmed to satisfy the leisure needs of the different age groups and males/females.

APPROVED BY RESEARCH COMMITTEE, MARCH 1988

Morris Kurtz, Chairperson

BASE ECCLESIAL COMMUNITIES AS AGENTS FOR SOCIAL CHANGE IN LATIN AMERICA

Maxine N. Richmond

Among the large number of grassroots organizations which have developed in Latin America in the past several decades, base ecclesial communities seem most representative of the population as a whole. Such groups are potential agents for social change in Latin America.

Latin American history has contributed to the present economic poverty and political powerlessness of the majority of Latin American people. Against this background small groups of Christians have organized to work toward improvement of their living conditions within the Christian context.

The majority of the relevant literature concentrates on the theology of liberation, with little attention to the actual workings of the base ecclesial communities. The small amount of material dealing with the actual nature and activities of the groups is locally produced for the use of the groups and their leaders.

There are other types of Christian communities in today's world, but the base ecclesial communities have a unique makeup, meeting agenda, and purpose.

A change in the relationship of the official Roman Catholic Church to the masses of people in Latin America was encouraged by the tone and the proceedings of Vatican Council II. The Latin American bishops' subsequently designated a "preferential option for the poor."

Descriptions of specific base community meetings point out that groups are small and members are poor and of both sexes and a wide age range. The meetings include singing, prayer, Bible reading and study, and discussion of how the readings apply to members' life situations. The communities engage in activities directed toward improving their basic living conditions. Leaders are recruited from the communities and trained by concerned religious workers in the area, who also help organize new groups.

Extensive networking and the determination and persistence of members and groups are key factors in the success of the groups. In contrast, social, economic and political obstacles impede implementation of change beyond the local level. The potential for bringing about significant social change exists in the work of base ecclesial communities. However, minimally democratic situations and oppressive policies on the part of military establishments and governments make it unlikely that this potential will be reached.

APPROVED BY RESEARCH COMMITTEE, NOVEMBER 1990

Robert Lavenda, Chairperson

PREDICTION OF RUNNING PERFORMANCE FROM SELECTED VARIABLES MEASURED DURING BICYCLE ERGOMETRY

Peter J. Seljevoid

The purpose of this investigation was to determine the ability of selected variables measured during bicycle ergometry to predict 12-minute run performance. The variables measured during bicycle ergometry included VO_2 max, power output at OBLA, and a single stage lactate measurement. Twenty-nine male volunteers served as test subjects. Descriptive physical characteristics were recorded for each subject and data were collected during a maximal and submaximal bicycle test and a 12-minute run.

The reliability of the testing procedures and lactate analyzer was also examined. Eight subjects repeated the maximal and submaximal bicycle tests and correlation coefficients of $r = .98$ and $r = .77$ were found when comparing trials of the tests respectively. The lactate analyzer also was found to be reliable. Eighty-one blood samples were collected and a correlation of $r = .99$ was found between duplicate aliquots.

VO_2 max was found to have the highest relationship with running performance ($r = .75$). Since body weight must be transported during running and not during stationary cycling, the relationships between the power output at OBLA and running performance were expressed three ways: a) with no correction for body weight ($r = .24$), b) using weight

adjusted power outputs based on 7 kgm kg⁻¹ and 13 kgm kg⁻¹ of body weight ($r = .48$) and, c) using body weight and absolute power output in a multiple regression analysis ($R = .60$). The relationship between a single stage lactate measurement and running performance was expressed two ways: a) using the lactate measurement and body weight in a multiple regression analysis ($R = .58$) and b) using the lactate measurement alone ($r = -.42$).

The results of this investigation suggest that variables measured during bicycle ergometry can predict running performance, but the degree of accuracy is questionable. The mode of testing to predict performance in a selected activity should be specific to the activity.

APPROVED BY RESEARCH COMMITTEE, AUGUST 1989

John M. Kelly, Chairperson

COMPARISON OF PHYSIOLOGICAL VARIABLES BETWEEN DEVELOPMENTAL AND ELITE CROSS-COUNTRY SKIERS

Julie Jorine Shorter

The U.S. Biathlon Team relies on regional club and collegiate cross-country ski programs to provide it with upcoming athletes. The purpose of this study was to compare the physiological status of a group of these developmental skiers with that of U.S. Biathlon Team members to determine the areas in which the developmental skiers differ physiologically. Values for maximal oxygen consumption ($\text{VO}_2 \text{ max}$), lactate threshold, and upper body power endurance were measured, as they have been shown to be important variables in cross-country skiing. Fourteen developmental cross-country skiers (seven female, seven male) and 14 elite U.S. Biathlon Team members (seven female, seven male) performed a maximal single-pole ski walk protocol on a treadmill that was equipped with an arm ergometer to determine $\text{VO}_2 \text{ max}$ and lactate threshold (expressed as % $\text{VO}_2 \text{ max}$). Following the ski walk, upper body power endurance was assessed by having subjects perform an incremental double-poling test on a specialized ergometer. An unpaired two-tailed t-test was used to analyze the data.

Group data (mean \pm SE). *indicates significantly ($p < .05$) lower than elite.

Group	$\text{VO}_2 \text{ max}$ (ml \cdot kg ⁻¹ \cdot min ⁻¹)	Lactate Threshold (% $\text{VO}_2 \text{ max}$)	Upper Body Power Endurance (watts/kg body mass)
Elite Male	65.6 \pm 2.0	84.4 \pm 1.9	4.80 \pm .25
Develop. Male	64.6 \pm 1.1	79.1 \pm 2.2	*3.01 \pm .36
Elite Female	52.5 \pm 2.4	86.0 \pm 1.1	3.16 \pm .32
Develop. Female	49.0 \pm 1.9	*78.1 \pm 3.3	*2.16 \pm .35

All $\text{VO}_2 \text{ max}$ values were lower than expected for these skiers, which may be due in part to the prolonged 30-35 minute test protocol. Maximal oxygen consumption was not significantly different between the elite and developmental skiers. Lactate threshold was significantly different between elite and developmental females; however, not significantly different between elite and developmental males. Testing the elite skiers at an altitude of 1,823 meters may partially account for the lack of differences between groups. However, upper body power was significantly lower in both male and female developmental skiers. These results suggest the need for added emphasis on upper body conditioning to improve upper body power endurance in developmental skiers.

APPROVED BY RESEARCH COMMITTEE, MAY 1991
John M. Kelly, Chairperson

ELECTROCHEMICAL ANALYSIS OF BLOOD LACTATE COMPARED TO A CLASSICAL SPECTROPHOTOMETRIC METHOD

Craig Milton Smith

The purpose of this investigation was to compare the results of blood lactate analysis by the Kontron Lactate Analyzer 640 with standard spectrophotometric analysis in order to ensure that the Analyzer 640 provided a reliable measurement of lactic acid. This specifically involved simultaneous measurements of both methods on a group of volunteers during varying periods of exercise.

Fifteen healthy male subjects participated in the study. Each test was conducted on a bicycle ergometer. Starting at an unloaded level, 30 watts of resistance was added each minute. Blood was drawn four times for both methodologies: rest, HR = 140, HR = 90% max, and after three minutes of recovery. A fifth and final drawing took place after three minutes of recovery to compare the Analyzer 640 with itself at two different parts of the body: antecubital and fingertip.

Hypothesis one states that no differences would be found between duplicate samples using the Analyzer 640. This held true throughout the study. Hypothesis two states that no differences would be found between methods. The differences found supplied strong evidence for calibration drift in the Analyzer 640 due to faulty diluting solution and sample preparatory tube combination. Hypothesis three states that no differences would be found between arm and fingertip measurements using the Analyzer 640. No differences were found.

The application of these results indicates that the Lactate Analyzer 640 is an accurate rapid method of determining blood lactate levels.

APPROVED BY RESEARCH COMMITTEE, MARCH 1988
John M. Kelly, Chairperson

THE ACUTE EFFECTS OF POSTURE AND EXERCISE ON PLASMA VOLUME AND TOTAL CHOLESTEROL

Suzette Elisabeth Sutherland

This study assessed the immediate effects of vertical exercise on plasma volume (PV) and total cholesterol (CHOL) following an initial postural induced hemoconcentration. Variation in PV, CHOL, high-density lipoprotein (HCL), low-density lipoprotein (LDL) and triglycerides (TRI) were monitored in 10 males (mean age 26.1 yrs) throughout a 200 min. protocol: 0-60 min., supine; 61-120 min., standing; 121-125 min., treadmill walking at 3.4 mph; 126-140 min., running at individual lactate threshold; 141-200 min., supine. PV, CHOL, HDL and LDL underwent significant changes after 60 min. of standing; TRI did not. PV decreased 12.75% (54.53 ± 0.62 to 47.56 ± 1.08), CHOL increased 11.84% (154.3 ± 8.03 to 171.9 ± 7.79 mg-dl⁻¹), HDL increased 15.82% (48.2 ± 4.77 to 55.2 ± 4.55 mg-dl⁻¹) and LDL increased 10.87% (90.7 ± 6.53 to 100.3 ± 7.07 mg-dl⁻¹). Neither walking nor intense vertical exercise induced further significant changes in these blood parameters. TRI was significantly increased 12.74% (81.8 ± 21.03 to 96.8 ± 19.44 mg-dl⁻¹) by exercise, consistent with the theory of increased free fatty acid (FFA) mobilization during aerobic activity. Resumption of a supine position significantly reversed the initial changes in PV, CHOL, HDL, and LDL associated with standing, and the change in TRI associated with exercise, such that baseline levels were reestablished. A negative correlation existed ($r^2 = 0.93$) between changes in PV and CHOL. These data suggest the hemoconcentration associated with vertical running is due to a change in posture, not to running per se; and shifts in PV account for immediate shifts in CHOL, HDL and LDL.

APPROVED BY RESEARCH COMMITTEE, NOVEMBER 1990
John M. Kelly, Chairperson

A CONTEMPORARY ANALYSIS OF THE INTERCOLLEGIATE ATHLETIC COMMITTEE

Dennis E. Wagner

PURPOSE: This study will help to educate the administrator, faculty members and student athletes on the benefits of the Intercollegiate Athletics Committee. A clear cut definition of the committee and a statement of its purpose will be established.

TOPICS OF DISCUSSION:

1. Track the history of the Intercollegiate Athletic Committee.
2. List the purpose of the committee.
3. Describe its major functions.
4. List the structure of membership and determine if members are selected or appointed.
5. State the contributions the committee has made.
6. Determine the function of the committee.
7. List recommendations for improvement.

APPROVED BY RESEARCH COMMITTEE, FEBRUARY 1987
Morris Kurtz, Chairperson